Vol. XXX. OCTOBER 15, 1902. No. 20

GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES HONEY AND HOME INTERESTS.

The A. I. ROOT Co.
MEDINA · OHIO ·

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Honey Column.

GRADING-RULES.

FANCY.—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

CITY MARKETS.

MILWAUKEE.—The main features of this market on honey have not met with any decided change since our last. The supply is not very large of any kind, and the demand is not urgent, yet choice comb or extracted will meet favor, and we encourage shipments and feel sure satisfactory results will follow. We quote fancy 1-lb. sections, 16@17; A No. 1, 15@16; old and amber, nominal. Extracted, in barrels, kegs, or cans, white, 8@8½; amber, 7½@8. Beeswax, 28@30.

A. V. BISHOP & Co.,
Oct. 8. 119 Buffalo St., Milwaukee, Wis.

NEW YORK.—Good demand for comb honey. Fancy worth 16; No. 1, 15; other grades, 12@14. Southern, in barrels, 4½@5½ per lb. Beeswax, 27@28. We will buy comb honey outright.

FRANCIS H. LEGGETT & Co.,
Oct. 9. Franklin and Varick Sts., New York.

SAN FRANCISCO.—Comb honey, 10@13. Extracted water-white, 6@6½; light amber, 5½@5¾; dark amber, 4@5. Beeswax, 27@30.

E. H. SCHAEFFLE,
Sept. 25. Murphys, Calif.

CHICAGO.—The advance noted in our last quotation has been maintained, and there is a very good demand for honey at the present time. No. 1 to fancy white comb brings 15@16 per lb., with the lower grades selling at from 2 to 3 cts. less. This includes the light amber. Dark grades of amber sell at about 10@11, and buckwheat 9@10. Extracted is steady, with white bringing 6½@8, according to color and quality. The ambers bring from 6@7; dark, 5½@6 per lb. Beeswax in good demand at 30c per lb.

R. A. BURNETT & Co.,
Oct. 9. 199 South Water St., Chicago, Ill.

KANSAS CITY.—The demand for both comb and extracted is good, especially comb, at quotations. We quote fancy white comb, 14@14½; No. 1, 13½@14; No. 2 white and amber, 13@13½. Extracted white, 6½@7; amber, 6@6½. Beeswax, 22@25.

C. C. CLEMONS & Co.,
Oct 11. 306 Grand Ave., Kansas City, Mo.

BUFFALO.—New comb honey is selling very well now. Receipts very light for this time of the year. Some call for extracted in 125 to 160 lb. packages. Fancy white comb, 14@15; A No. 1, 13½@14; No. 1, 13@13½; No. 2, 12@13; No. 3, 11½@12; dark, 10@12. Extracted white, 6½@7; amber, 5½@6; dark, 5@5½. Beeswax, 28@30.

W. C. TOWNSEND,
Oct. 7. 167 Scott St., Buffalo, N. Y.

CINCINNATI.—Comb honey is in good demand, the supply is short, and very little offered. No. 1 fancy sells at 16c; other grades less, according to quality. The demand for extracted is very active, and prices are a little better. Amber sells for 5¼@5½; alfalfa water-white, 6@6½; white clover, 7½@8. Beeswax, 30.

C. H. W. WEBER,
Oct. 7. 2146 Central Ave., Cincinnati, Ohio.

NEW YORK.—We are having a good demand for Comb honey, and receipts are quite plentiful. We quote fancy white at 15c, and some exceptionally fine lots will bring from 15½@16; No. 1 white, 13@14; amber, 12. Buckwheat is late in arriving and none has been on the market as yet to cut any figure. Expect large receipts next week, and it will sell at from 10@@12c, according to quality and style of package. Extracted in fairly good demand, at 7½ for white, 6½ for light amber, and 5½@6 for amber. Southern, in bbls., at from 55 to 65c per gallon. Beeswax nominal at 28c.

HILDRETH & SEGELKEN,
Oct. 10. 265-7 Greenwich St., New York City.

ALBANY.—Honey market firm with good demand and moderate receipts. We quote fancy white comb, at 16c; A No. 1, 15; No. 1, 14@15; No. 2, 13. Fancy buckwheat, 14; No. 1, 13. Extracted, light, 7@7½; mixed, 6@6½; dark, 5½@6. Beeswax, scarce, 28@30.

MACDOUGAL & Co.,
Oct. 10. 375 Broadway, Albany, N. Y.

SCHENECTADY.—There is a good demand for both clover and buckwheat at following prices Fancy white in paper cartons, 16; No. 1, 14@15; No. 2, 12½13; buckwheat, 11@12½. Extracted, light, 6½@7½; dark, 5½@6,

CHAS. MCCULLOCH.
Oct. 10. 523 State St., Schenectady, N. Y.

BOSTON.—Our honey market remains firm, with good demand and fair stocks on hand. Honey is not coming forward as fast as usual, and the tendency of prices is steady. We quote you our market as follows: Fancy white, 1-lb. sections in cartons, 15c; No. 1, 15; No. 2, very light supply, 14; glass front sections generally 1c less than this. light amber, 8c; amber, 7½. Extracted honey, light supply.

BLAKE, SCOTT & LEE.
Oct. 11. 31, 33 Commercial St., Boston, Mass.

DENVER.—No. 1 white comb honey, per case of 24 sections, $3.10 to $3 25. Fancy white comb honey scarce, and brings $3.50 per case. Extracted, 7½@8c. Beeswax, 22@26.

THE COLORADO HONEY PRODUCERS' ASS'N.,
Oct. 11. 1440 Market St., Denver, Col.

PHILADELPHIA.—Comb honey is in quite active demand. Of late years the whole season's jobbing business is thrown into October and November, so all shippers should market their honey early. We quote fancy white comb, 16@17; No. 1, 14@15. Extracted, white, 7@8; amber, 7.

WM. A. SELSER,
Oct. 11 10 Vine St., Philadelphia, Pa.

FOR SALE.—Light extracted honey; cans and kegs, 7@8c per lb. Sample, 8c.

I. J. STRINGHAM, 105 Park Pl., New York City.

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Queens that are Satis-

factory in Cuba and Canada, Maine and California, are worth trying. I have that kind. See former ads. and free folder. Prices: Warranted, 75 cts.; six, $4.00; select, $1.00; six, $5.00.

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		¾-lb. " " " "	4.75

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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

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YOU ASK, Mr. Editor, p. 799, "Are you sure that those wax scales found on the floor-boards in the spring were real wax scales? or is it possible our German friends," etc. Yes, they're wax scales fast enough. Have seen 'em with my own eyes, not in Germany, but right here in Marengo. [I give it up if you saw the scales.—ED.]

NO, I DON'T FAVOR two inches under the combs summer and winter, Mr. Editor, p. 800. You can't have so much space in summer, for the bees will fill it with comb. You were, perhaps, deceived by seeing that my floor-boards were not reversed in summer. Nowadays, instead of reversing them I put in a false bottom to fill up the extra space. Less trouble than to have to lift the hives for reversing. [I accept the correction.—ED.]

NEITHER DO I consider the Clark "suitable for only a few colonies, or for a person who has an abundance of time to keep it going." A *new* Clark works well, and will give a big smoke. But it's too expensive, for in a little while it plays out in some way so it must be thrown aside. [The Clark is sold for a cheap smoker. We have thought several times of dropping it out of our catalog; but there are those who want a cheap thing simply because it is cheap in price. Perhaps we should be doing such people a real kindness by denying them the cheap thing in spite of their preference.—ED.]

WHAT A SEASON this has been! bees starving in June, and here it is the first of October, and bees busy working on clover, both white and red! [My, oh my! what a locality! I remember that, some years ago, after the time for the usual honey-flow had fully passed, and you had no honey, you afterward secured a big crop. The strange part of it is that bees should be gathering honey from white clover. In our locality it has been too cold and rainy for the bees to do any thing for the last week or ten days. —ED.]

GEORGE SHIBER is right, p. 808, in saying, "Do not make a brushed swarm before queen-cells are started;" for, as he says, the colony may not offer to swarm; and if it does not you will get a better yield than with a brushed swarm; at least I think that is the case here. Besides, leaving the non-swarmers unbrushed, and breeding only from them, will be just so much on the road toward a non-swarming strain. In most cases the colonies that give the best yields are those that never offer to start a queen-cell.

I ALWAYS SAID James Heddon deserved a vote of thanks for giving us the slat honey-board. As friend Greiner says, p. 807, it lessened pollen, travel-stain, burr-combs, and propolis. But when I learned to lessen those things just as much with thick top-bars and proper spacing, I was delighted to cast aside the slat honey-board with its sticky mess between top-bars and honey-board, and I can't understand, friend Greiner, why you should want to give it another trial. [Just our experience exactly; and yet every once in a while I run across men who do not believe that thick top-bars properly spaced will lessen — in fact, do away almost entirely with the burr-comb nuisance. I can only think their prejudice is so deep-seated that *unconsciously* they are blind to their best interests.—ED.]

A CORRESPONDENT wants me to tell what should be the gross weight of hive, combs, honey, bees, and every thing, so as to be sure there shall be no lack of winter stores. There can be no fixed rule. I want my eight-frame hives with cover and bottom-boards to weigh not less than 48 pounds each. A ten-frame hive should weigh more; a chaff hive much more. Old combs weigh much more than new ones. One hive may have several pounds of pollen more than another. Outdoor wintering requires several pounds of honey more than cellar winter-

ing. A few pounds too much honey for winter is just about right. [The trouble is, a good many do not take into consideration the matter of locality. Here in Ohio, for example, outdoor bees would require less than they do in Marengo, Ill.; and I suspect that, for Northern Minnesota and Wisconsin, they would require more.—ED.]

"ALL KNOW, perhaps," says George Shiber, p. 808, "that the queen would rather lay in an old black comb than in one that has no cocoons." Strange to say, all don't know that, and every now and then some one insists that old comb is not liked so well by the bees. Not so often in this country, however, of late, but across the water it is sometimes given as one reason for renewing comb that is a few years old. [My experience and observation are the same as yours. If any thing, I thought the queen *preferred* to lay in foundation partly drawn out into comb—perhaps because she does not have to crowd herself down so deep into a small hole as she does when laying in old comb. Possibly what George Shiber had in mind was that the bees prefer old comb, apparently, for a winter brood-nest. That is quite different from the other statement, that the queen prefers old combs for laying. —ED.]

"THERE WAS no doubt about it—catnip had been sown along the roadsides," p. 805. No doubt, Mr. Editor; but your seeing it there was no proof that any man had a hand in sowing it. You'll find it here along the roadsides, but I doubt that a seed of it was ever intentionally sown by any man, bee-keeper or not. Do the birds sow it? [Of course, I could not *prove* that the catnip I saw along the roadsides at Humboldt sprang from seeds that Dr. Gandy and his men sowed; but from the fact that there were *more* catnip-plants along the wayside around Dr. Gandy's home than I had seen along any other wayside in the country, I was led to believe that he had actually increased the number by hand sowing. While believing all this, I am still doubtful about catnip ever being able to make a very great increase in the amount of honey per colony. It takes hundreds and hundreds of acres of pasturage to make much showing in supers. —ED.]

SOME YEARS AGO I tried brushed swarms; but, although better than natural swarms, I was never very enthusiastic about them, for still they are swarms after a fashion. What I want is to keep the whole force, present and prospective, together, and with brushed swarms the colony is depleted of its future force. [From the number of reports in this issue it would seem to me you abandoned the brushed plan prematurely. It is really surprising, the number who have tried it and who are enthusiastic in its praise. See our symposium elsewhere in this issue. The plan of brushing swarms practiced by Vernon Burt gives him *more* of a working force—more bees—than a natural swarm would. Just turn again to page 640, Aug. 1st GLEANINGS, where I described his method of forcing swarms on the "shook" (?) plan. In the multitude of counselors there is wisdom, and in this case (reports in this issue) there is too much of truth, apparently, to be turned down. I hope, therefore, that you will try it again.—ED.]

AFTER READING with interest what Dr. Cross says about smokers, p. 813, I arise to make a few remarks. Dr. Cross says that, "without prepared fuel, or special fuel, any make of smoker will not hold its fire if left standing for any length of time." I don't know just how inclusive or exclusive that "prepared" or that "special" is meant to be; but with me any fuel that may be considered reasonbly fit for smoker fuel—such as chips picked up from the woodpile, without any preparation—will burn in a standing smoker till burned out. [Just so here. Any fuel with us, unless it be positively wet, will keep burning in any of our smokers, kept right side up, providing, of course, it has been well lighted. A poor fuel may not ignite, and consequently may cease to burn, simply because there was not a *bed* of live coals. When a smoker has plenty of fire in the bottom of it I never knew one of ours to go out in the open air except for want of fuel; but any smoker, if put into an inclosed box where drafts are all shut off, may go out.—ED.]

"ONE MAIN FAULT with the Crane and Corneil smokers is that the spring inside the bellows is too strong for nice working." Correct. That stiff spring makes the hand very tired if much smoking has to be done in the course of a day. But if the spring is too weak the bellows will not be opened by it; for unless you keep squeezing the bellows pretty hard it will slip out of your fingers and fall to the ground. I'll tell you what to do: Send to the manufacturers or dealers for a smoker with a light spring. If you insist upon it you can get it. Then nail upon the three sides of each bellows-board at the edges little cleats ¼x⅛ inch or larger, and see how nicely it works. Don't trust to the groove cut in the bellows with its smooth rounding edges. It's the sharp edges of the cleat that count. Some day the manufacturers will learn to put on such cleats. [I believe, doctor, you are exactly right, and it will not be my fault if, in 1903, both of these features are not incorporated in the new smokers made by our company.—ED.]

"THE CRANE has the additional fault of the valve, which I consider of no particular benefit." Why, doctor! That valve gives you the benefit of the full strength of direct draft without having smoke sucked back into the bellows, thus making the Crane more economical than the Clark.

"When well crusted with creosote it becomes a nuisance indeed." Right.

"Its position and manner of fastening make it a bad job at cleaning, and few people would fool with it." I suppose you

mean fool with cleaning it. One that has been in use here for several years has been cleaned just once this summer, and when cleaned it works just as well as new—simply a matter of taking off the bellows, taking out a few screws, and then it's an easy thing to make a thorough job of cleaning the valve. Takes time, but it's worth it to have a new smoker.

"THE SPOUT, being held on with a hinge, oftentimes does not fall properly on the barrel; and if hastily jammed down it will crimp open the barrel, so that it will always leak smoke at that point and never be a good fit again." Right you are, doctor, only you've hardly made it strong enough. After the thing gets sufficiently crimped and gummed up, you can't make the nozzle stick on at all, and most of the smoke will blow out at the joint. And yet I wouldn't like to do without that hinge; for then when it gets to be ill-fitting (as it will, hinge or no hinge) the nozzle will fall off some time into a hive just at a time when you are most anxious not to have it do so. I don't know the remedy. How would it do to have more of the nozzle telescope over the barrel, and have the telescoping part flare out wide at the edge so it couldn't by any possibility make a start in the crimping business. [We are making a new hinge and new snout which we hope will overcome both objections given above. Perhaps I ought not to tell tales out of school.—ED.]

"IS IT NOT the common thing that the queen is not found quickly, and hence the bees find her before the bee-keeper? If that is the case the queen should generally be found with a cluster of bees." Thus the editor, p. 800, speaking of clipped queens coming out with swarms. Replying, I should say that "in this locality" it is most decidedly *not* the common thing that the queen is not found quickly. I think I am safe in saying that in 19 cases out of 20 (my assistant says 49 out of 50) the queen is found before all the bees of the swarm have left the hive. Of course, I mean if the bee-keeper is on hand when the swarm starts. If not found quickly, you think "the queen should generally be found with a cluster of bees." May be she *should*, but she isn't, at least not "in this locality." Times upon times, when I have not been promptly on hand to see the queen issue, I've looked on the ground for that cluster of bees with the queen, but rarely found it. The queen had gone back in the hive without waiting for any cluster. [It is your practice, I take it, the minute a swarm is seen to come out, to rush to the entrance from which it is coming. It is the case with a good many that the swarm is not discovered till it is all out in the air. It hovers about for a considerable length of time, and finally some stragglers begin to go back to the old hive. This locates the hive from which it came. At that time there is liable to be, as I know from my own experience, bees crawling around where the queen is at the entrance. Your locality and your practice seem to be a little different from ours.—ED.]

The fight is on! the giant Labor stern
Shows all his strength at last;
While locking horns with Capital,
Out goes the furnace-blast.

AMERICAN BEE JOURNAL.

Mr. Albert Gale, in the *Australian Bee-keeper*, makes a review of the only "funny" bee-book ever published. In speaking of drones, the author of this book says: "One by one they sail off into space, irresistible, glorious, and tranquilly make for the nearest flowers, where they sleep till the afternoon freshens and awakens them." Mr. York replies: "That the drones must sail off into space to reach the nearest flowers is amusing; that drones visit flowers at all is decidedly so; that they fall asleep on the flowers till the refreshing afternoon awakens them is irresistibly funny." Mr. York further says: "This is the same book that has been approved by others as thoroughly reliable in its teachings, being nothing less than Maeterlinck's Life of the Bee." Whatever may have been said by way of approval in this department concerning that book is now thoroughly expunged and withdrawn. It was a typographical error. The writer should have said the book was "thoroughly re*lie*able." But still an intelligent reader will find some wheat among the chaff. Aside from bees the writer of that book has some good philosophy.

Dr. Miller thinks it will require about a quart of bisulphide of carbon to treat two or three thousand pounds of honey if it is rather closely packed in a room having tight walls. It costs 40 cents a pint, or 75 cents a quart. Some writers have told how they have had fire quite near this substance without its igniting. They'll repeat that thing just once too often some bright day when a draft of air brings the fumes toward the fire. It does not stop to burn—it goes off with a bang.

In an article on spraying, Mr. H. L. Jeffrey says:

There is a class of citizens in every place that are the worst criminals on earth. They occupy good positions in society, in the church, and in all organizations. They have strong influence, and they know they own the earth but have not yet fenced it in, and they are the vilest enemies to every occupation and citizen, but they are out of the reach of the law. The law punishes, not for the act, but for getting caught, and they do not get caught. To illustrate by a fact:

A certain minister in my vicinity found out that kerosene kills vegetation, and proclaimed broadly, "When an obnoxious plant is in my way, a half-pint of kerosene oil puts it out of my way."

Not long afterward, various shrubs and plants began to die that were offensive to various persons. They followed that minister's advice.

Another person finding that sweetened Paris-green water would kill flies and other insects, exposed it for that reason, and killed off 20 colonies of bees. Some time afterward it leaked out that, "I made up my mind those devilish bees had to be gotten rid of." The bees were the things aimed for, some of their honey was eaten, and the eaters were made sick.

The law does not reach that class of people, but they are everywhere.

Spraying really does more harm, as a whole, than it does good. I have worked at it, and I have studied it closely for more than 20 years. It does some good, but that good is limited.

I am sure Mr. Jeffrey casts no reflections on the clergy as a class; but it must be admitted that some of the most unreasonable and unreasoning men in the world are to be found among them as in all other callings. But that is nothing against what they are supposed to preach.

Mr. York quotes the following from the New York *World:*

Charles Zane, aged 11 years, died to-day from brain fever, superinduced by excessive cigarette smoking. He was ill ten days, and while delirious he went through the motions of holding a cigarette to his mouth and imagined he was blowing smoke from his nose.

And aptly adds:

It pays to bring boys into the world. But it doesn't pay to allow them to be killed off in that way. The "killing off," however, ought to be applied to the human hyenas that make and sell cigarettes and similar body-and-soul-destroying things. But it pays in dollars and cents, don't you know? That's the test now-a-days. What does a few thousand boys amount to if some one can make a few more dollars?

It takes G. W. Y. to write a big sermon in one short paragraph.

Concerning phacelia, Mr. Luhdorff says:

It is not only a good honey-plant for the bees, but it furnishes with its juicy green stems and leaves also a very excellent green fodder, which horses, cattle, goats, and hogs eat with the greatest relish. Cows and goats give, when fed with phacelia, great quantities of milk. The crops of seed are also rich, one acre (American measure) producing in Prussia 400 to 500 pounds of seed. It takes about 5 pounds of seed to sow one American acre. We recommend to all bee-keepers and farmers to try this plant. The plant does well in almost any kind of soil. The seed can be sown similar to grain after the fields have been plowed.

COLMENERO ESPANOL.

A German bee paper says one of the best ways to get rid of ants is to dig a hole down into their nests and drop in a small lump of gum camphor. The odor of it is so insupportable to the ants that they will fold up their tents and skip out. The only advantage camphor has over carbon bisulphide is its greater cheapness.

L'ABEILLE.

Several cases are cited in the September issue showing the value of honey as a means for the removal of warts. One child whose hands were covered with them was cured in a short time. Honey was rubbed over the hands thoroughly, after which they were covered with gloves for a time. Another writer removed them from the face of his daughter in a similar manner. Her face was rubbed with honey, and well bandaged. In ten days the trouble was out of sight. It is cheaper than some drugs, and not at all dangerous.

COMBS ATTACHED TO SEPARATORS.

"Good evening, Mr. Doolittle. The evenings are beginning to be of considerable length."

"Yes, the days are much shorter than they were, Smith, and it reminds one that winter will soon be here. It hardly seems as if we had had any summer, it has been so cold all the time. What are you busying yourself at these days?"

"I have been crating the little honey I have, for a few days back, and I find many more combs attached to the separators than usual, so I thought I would come over a little while and talk with you about the matter. How can we prevent the bees from attaching or fastening the comb to the separators?"

"Did all of your colonies attach their combs to the separators?"

"No. Some of them gave as perfect combs as I ever saw. But why did you ask this?"

"So I might know how to answer you; and I would say, in short, put each colony in just the condition as were those which gave those perfect combs. Perhaps this is not just the answer that should be given in your case; but I often think such an answer would be the best reply that could be given in the majority of cases, for it would set the questioner, having the trouble to studying into that which would make him an intelligent bee-keeper by creating in him a desire and a determination to master every problem which might come before him."

"Well, that is outspoken; but my desire is strong enough so I'll forgive you if you will only tell me what you can to help me."

"I'll do the best I can by telling of some of the things which contribute toward an attaching of combs to the separators, which things we should avoid if we would have perfect combs. The greatest cause for this trouble lies in not having the hives stand level, for the bees always build their combs perpendicular, especially in the case of thin tall sections, as with such it requires very little out of the perpendicular for the lower end of the comb to come near enough to the separator for the bees to build brace-

combs out to the separators to hold each comb in place, as they nearly always look out for bracing in this way where the septum of the comb comes within ⅜ inch of any part of the hive."

"Must the hive be perfectly level each way?"

"No. It is not necessary that the hive be leveled both ways unless the combs in the brood-chamber run in an opposite direction from those in the sections; but it *is* necessary to have the hive level in the direction of the open sides of our sections if we would produce the nicest of section honey."

"Do you do this leveling with a plumb, or will the eye be exact enough?"

"It is not well to do this leveling with the eye; for unless the eye is trained in this matter it is little better than guesswork. I was over to Mr. Brown's the first of the summer, and he thought hives could be leveled with the eye; but a level showed that some of them were two inches out of the way. I use a spirit-level for this work; but in the absence of this I would use a plummet, as you suggest."

"It hardly seems that my hives were enough out of level to cause this trouble. I will try a level on them to-morrow."

"It may be that it was not; but it was in the starters, for, next to having the hives level, comes the matter of how the starters are put in the sections. If in a slipshod way, so that they pull off or fall down from the weight of the bees before they thoroughly attach them to the top of the sections, poor combs and many braces will be the result."

"I do not think that many of mine fell down, though in a few instances I was quite sure that this was what caused the trouble."

"Then if care is not taken to have these starters run true with the sections they will be angling enough so that the bees will swing the edges of the combs around and attach them to the separators near the bottom instead of to the sides of the sections, thus making a nasty mess when we come to remove the separators. Even where full sheets of foundation are used, some are so careless in putting them in that the edges are nearer the separators than the sections, when placed on the hives, when the bees will attach them to the nearest point, as they always do, for they care not as to the salable quality of their product. This is not what they are working for, and it is the bee-keeper who must guide aright if he wishes the salableness in perfect order. But in full sheets and a level hive we have the greatest prevention against these brace-combs."

"Do you think it pays to use full sheets of foundation in the sections?"

"Latterly I have come to the conclusion that it does not pay to try to dispense with full sheets of very thin foundation for each section, only as we have full sheets of drawn comb to use in place of the foundation. But the full sheets of foundation will not remedy the trouble where the hives are much out of level, for the bees seem to have a way of building or drawing out their cells on the side of the foundation furthest away from the separators first, which tends to curl the lower end of the foundation around nearer the separator, till the bees attach it to the separator instead of the bottom of the section."

"Well, I see that here is a part of my trouble, as well as having some of the starters fall down. I think I can remedy some of these things next year, if not the whole trouble."

"Next in order comes the putting-on of sections while the colony is too weak to occupy them fully, these weak colonies commencing on the bait sections first, and then spreading out from there in either direction; but as it is the warmest and most homelike on the sides next the center, they draw out the cells near the center of the foundation, up and down, first on this inside of the foundation, which causes it to curl at the sides or edges, till it comes nearer the separator than to the sides of the sections, and thus it is attached to the separators instead of the sections where it should be."

"Well, there! That accounts for more of my trouble than any of the rest, for I noticed that more of these attachments were found in those supers which had only a few completed sections in them than in those where all of the sections were finished. But is there any other reason?"

"Lastly, this trouble may come from putting the sections on too early in the season, before the honey harvest commences, where the colonies are strong enough to enter the surplus apartment, or allowing them to stay on the hives during a long period of scarcity, when the bees, not having any thing else to do, amuse themselves in gnawing the foundation, which results in less perfect combs than would have been the case had a good honey-flow come on immediately after putting the sections on the hive. Such gnawing more often results in the twisting of that part which is left than otherwise; and in thus twisting, some portions of the foundation come nearer the separators than the sides to the sections, when brace-combs are the result. This putting-on of sections too early in the season can be easily avoided by studying our location as to its flora; but as we can have no control of the secretion of nectar or the periods of scarcity coming after the sections are on, this part of the matter can not well be overcome."

"I am very glad I came over, and hope to profit in the matter another year."

"By avoiding all the things which tend toward these brace-combs being attached to the separators, we can have perfect combs, and of the highest quality, all other things being equal; and I have so far overcome this matter that hardly one section of honey in three hundred is defective along this line."

Our Symposium on Shook or Brushed Swarms.

A Shook Swarm Not Materially Different from a Natural One, and Avoids the Demoralization of the Whole Yard; Necessary to Smoke the Bees Before Shaking; Under what Conditions Bees will Build Worker Combs; Valuable Suggestions from a Practical Bee-master.

BY H. R. BOARDMAN.

When the bees are taken from a colony, whether they are brushed or shaken off the combs, or smoked or frightened out by drumming and jarring the hive, or by whatever means they are gotten out, they become artificial swarms, and it simplifies matters a good deal to call them such. If the colony from which they are taken has already made preparations to swarm they are in no way materially different from a natural swarm, except, possibly, they may contain a greater proportion of very young bees; and I know of no good reason why both the swarm and old colony may not be as normal in condition as in natural swarms.

While this method seems to be coming to the front just now, it is no new thing — in fact, it is quite old with me. I have practiced it to some extent for a good many years — not on all my colonies, but only on those that were making preparations to swarm, or some small out-apiary that I could not well afford the time to watch. When the apiary was large, and much swarming expected, I have usually noted those most likely to swarm.

Then in the afternoon, when the yard was quiet, and little or no swarming expected, I have anticipated their plans a little by artificially swarming them, and in this way avoided much annoyance, confusion, and demoralization of all the bees in the yard that a swarming-panic might create.

It is important that the bees should be gathering honey and secreting wax in order that their work of comb-building may be begun at once in the new hive, unless feeding is to be resorted to, in which case it is better to give the colony at least one liberal feed 24 hours before they are swarmed. The colony to be swarmed should be strong in bees and brood, and have a laying queen.

Smoke the bees vigorously; turn the hive a quarter around on to a stand just back of the old one. Set in its place another hive with a full set of empty frames with only comb starters. Combs will be more perfectly built if the frames are closely spaced. I use mine in an eight-frame hive; smoke the bees again, give them time to load up with honey; open the hive, and find the queen and put her into the new hive after shaking a few bees in, then take out the combs and shake the bees in front of the hive and let them run in the same as in natural swarming. I prefer to shake the bees off the combs — well, because it is the way I am used to, and it is easier and quicker for me to do it that way. It is true that a little raw nectar will sprinkle out among the bees sometimes when honey is coming in rapidly; but I never regarded that as a very serious thing. The bees would very soon clean it up and use it to advantage. I prefer to leave a few bees, especially if these colonies are to be depended upon to raise queen-cells. Then they may be shaken out again, being careful to leave enough bees to protect the hive against robbers.

In order to get a strong working force I have sometimes united the bees of two colonies, shaking them together in one hive, and also would unite the two old colonies by tiering them up, one on the other, and give them one of the old queens.

It makes less exposure of the bees and honey to drum or smoke the bees out directly into the hive in which they are wanted.

Later in the season, when no honey was being gathered, and the bees were disposed to rob, I have often practiced this plan, sometimes driving three or more swarms at the same time. A little experience enabled me to get the queen almost without failure. Strong swarms with good prolific queens are important factors in getting good work in comb-building. Favorable weather and a steady honey-flow are also important, but this we can not control.

A strong swarm with a good queen will usually build worker comb so long as the queen is able to keep well up with the comb-builders, and until she returns to refill the combs that are being vacated by the first-hatching brood. At this time, if the combs are not finished, and honey is coming in, more or less drone comb will be likely to be built for store combs.

Bees under the swarming impulse are disposed to build more or less drone comb; but when the swarming impulse subsides, the impulse to build drone comb also subsides. In artificial swarms the desire to swarm seems to be entirely satisfied, and there is very little disposition to build drone comb.

The character of the comb-building depends very much upon the queen, and queens are variable.

If I find brood in the sections I feel sure it is my own fault in putting the supers on too soon, or in stampeding the bees into the supers by careless handling afterward. The queen will not leave the brood-nest after she is well established in egg-laying unless some unusual disturbance has caused her to do so. I have never found it necessary to use perforated zinc excluders to prevent the queen from going into the supers.

At the close of the season, if I have more bees and combs than I want I unite the bees back and render the poorest combs into wax.

I have now a series of experiments with nine artificial colonies in building natural combs by feeding under different conditions. These bees were shaken out of average colonies with average queens upon empty frames with narrow starters, some with and some without wires; some of the combs are now nearly complete. The most nearly perfect are in wired frames; but some without wires are nearly as good. Wires are perpendicular, and absolutely prevent sagging. There is practically no drone comb in any of the nine colonies. The wires answer as guides in building the combs. They should be waxed.

East Townsend, Ohio.

CUBAN SHOOK SWARMS; SHAKING A SOLUTION OF THE FOUL-BROOD SITUATION; WHEN AND HOW TO SHAKE; THE EFFECT OF SHAKING ON BLACKS, CARNIOLANS, AND ITALIANS; SHAKING GIVES PERFECT CONTROL OF SWARMING.

I have made several hundred of them this year, and *am still shaking*. There are two reasons for this—to control swarming and to keep clear of foul brood. On account of the latter, as well as the high price of foundation, I use starters this year entirely.

Last year I used full sheets of foundation, and I can not see that they are of enough advantage to pay the difference in cost, though perhaps they would in a colder climate or a shorter honey-flow. There is a difference between shook and brushed swarms when some bees are left. In brushing you get those that the brush hits, and leave those that it misses, while shaking takes those that have the poorest hold of the combs, and leaves those who hold on better. The result is, in the latter case, that the queen is about certain to drop off, while the bees that are left are the young nurse bees that are wanted to care for the brood. Even in this hot climate there must be bees enough left to care for the brood until some bees hatch.

In shaking, make a quick vertical move, and no honey is jarred out if not too violent; but if the combs are slanted the honey on the lower side is spilled. This, however, does no great harm, for it stays with the bees on the old stand, and they will look out for robbers. I smoke pretty well so the bees fill themselves with honey.

The old hive should be filled with frames about as fast as the combs are taken out, to make a place for the bees to cluster, or they will run out of the entrance or boil over the top, and perhaps lose the queen.

The best time to shake is toward night, for the bees are not so apt to swarm out. In case a frame of young brood is left, there is very little danger. If they do swarm out they are not apt to run away, for they will usually stay several days before leaving the limb.

Blacks are much more apt to swarm out than Italians. Carniolans build comb faster than the others, and build up quicker; or, at least, those in one of Coggshall's apiaries here do. The brood is to be put into a new hive and set facing away from the swarm. I stop the entrance with green grass; and by the time the grass wilts the colony is able to care for itself. In filling the hive with brood I put in ten full frames, the combs of honey or those with but little brood being put either on other colonies or extracted. This makes less increase and stronger colonies. Sometimes there will be brood from three different hives to make one.

I give a queen-cell at the time of shaking; then by the time the brood is all hatched there is a young queen laying. This colony can then be "shook" in its turn, but, of course, there will be no brood, so the bees are all left.

I melt up the combs for wax after extracting what honey there is. By this means I hope to keep clear of foul brood and to get a lot of wax. I consider "shaking" the most valuable thing that has come up in the bee journals for a long time, for it gives *perfect* control of swarming.

Artemisa, Cuba. HARRY HOWE.

SHAKING PREFERABLE TO BRUSHING; SHAKING FOR REVENUE ONLY; ADMIRABLE FOR OUT-APIARIES; BEST TIME FOR CLIPPING.

In answer to your inquiry concerning brushed or "shook" swarms I will say that I have practiced this plan for years, more or less, as the best interests of my business were indicated from year to year. In the beginning I will say that, in my judgment, "shook" swarms are much more preferable, not in name but in fact, to brushed swarms. It is a fact patent to all who have handled bees that, in shaking a comb, it is the oldest bees that leave the comb first, so it is possible for the apiarist to leave the combs protected by bees that will stay where he puts them. Hence I say this condition which is so desirable can be secured better by shaking than by brushing all and then returning a part to the combs without proper regard to age.

I have never practiced shaking off all the bees, neither would I advise it, for there are generally a few pilfering colonies in almost any apiary that would be attracted by the smell of new honey left on these combs, and would gladly take advantage if left entirely unprotected.

I will emphasize the fact that the combs of brood should be left well protected; but as to just how many bees to leave would be indicated at the time to the operator according to the amount of hatching brood and the condition of the weather. The hive containing the brood is carried to a new stand if intended as increase; but if the intention is to unite with the parent colony at the end of 21 days, then it is set close beside it with the entrance at right angles.

Some objections to "shook" swarms have

been raised—that the new honey will shake out. In my opinion, swarms should never be shaken unless the new honey does shake out; and the more so, the better I consider the conditions are for this plan of artificial swarming. When the honey flies out badly I shake them directly on to the top-bars of the new hive, dousing the bees with as much honey as flies out. Remember, the new swarm receives all the flying bees of the old colony. They will soon cluster and clean themselves up, and be in that plethoric and fat condition so necessary to the secretion of wax—a condition they must soon get into if they are driven on to starters only as I do here when running for comb honey.

This plan I consider the most sensible one for transferring from box hives or crooked combs, only we are compelled to drive instead of shake, and the only plan by which we can successfully cope with foul brood.

If this plan is diligently followed through the honey season with all colonies that show even one cell of foul brood, we do not come up to winter with a lot of colonies that must be burned to prevent the spread of the disease. A colony that develops the disease in the fall after the honey season is past will live until the beginning of the next honey season in fair condition, when it can be shaken, hence the great loss from foul brood is found only among careless bee-keepers.

Now, when it comes to shaking swarms for "revenue only" I will say, as I have said before, I take Josh Billings' advice about setting hens: He says, "Never set your hen till she wants to set;" so if my bees are contented to go on storing honey I never shake a swarm till "she wants to shake," and then I shake her with a vengeance, so there will be no second swarming.

With me this plan works admirably in running out-apiaries. If no increase is desired, two can be shaken together, and the brood from two united, thus securing powerful colonies.

With regard to the value of a "shook" swarm as compared with a natural one, I will say that, if you have followed Josh's advice, you have a swarm almost identical to the natural one, only it receives all the flying bees instead of part.

In practicing this plan in out-apiaries I examine every six days, and shake every colony that has eggs in the cell cups. Of course, this makes some swarms a little premature, say from four to six days before the swarm would emerge by the natural plan; and unfavorable weather conditions sometimes make you wish you hadn't; but it also makes the natural swarm wish they hadn't.

This is the only time I do any clipping of queens, and I always clip them when I make a "shook" swarm, for I think they are a little more prone to abscond if they meet with bad weather than are natural swarms, so I fix them so they will be compelled to go "on foot" if they go at all. On the other hand, if the weather is fine and the honey-flow good I think they are less liable to abscond than are the excited, uneasy, natural swarms.

I have generalized, perhaps, too much in this article, but can give the *modus operandi* if you desire. M. A. Gill.

Longmont, Colo., Sept. 10.

"SHOOK-SWARM" METHOD VALUABLE FOR OUT-APIARIES; A PLAN TO UNITE BEES AUTOMATICALLY; SOME IMPORTANT POINTS TO BE OBSERVED.

The expression "shook" swarm is so expressive, so catchy, and so popular, that it is here to stay, in spite of grammatical rules, and Dr. Miller too. Here's what I know about them:

The method is peculiarly adapted to the production of comb honey in out-apiaries, with no one present to hive swarms. When the first flow begins we drive to the out-yards and quickly inspect all colonies for indications of swarming. Our hives are mostly in pairs, side by side. Here is a colony that has queen-cells started. We will call it hive A, while the one at its side we will call hive B. Hive A contains a very strong colony. We move it to one side and put in its place a hive containing a frame of brood and 7 frames with half-inch starters. On this a queen-excluder, and above this one or two supers containing several bait-combs, or, better, a super, bees and all, from some colony already at work in the sections. Now, the bees are swiftly shaken from the brood-combs of hive A, in front of the new hive; lastly, dump all the bees from the old hive to make sure of having the queen in the new colony. Now remove hive B to a new stand, placing on it the brood-combs taken from hive A. This throws the working force of both colonies into the shook swarm, which will do good work for some time. Seven days later, hive B, having a double quantity of hatching brood, will be very strong. Shake about half of the bees into the shook swarm. If the flow continues, repeat this seven days later. Hive B will give a good crop of extracted honey, or a shook swarm may be made from two such colonies, if the continuance of the flow makes it desirable.

I am now experimenting with a plan to unite automatically the bees hatching from the old brood-combs with the shook swarm. Here is a plan used in Colorado, advocated in the *Rocky Mountain Review:*

A super-cover, similar to the Porter escape-board, is placed over the super containing bait combs. In the front end I cut out a slot three inches long and one inch wide. A piece of wire cloth is tacked over the under side of the slot. This is to give ventilation to the story containing the remainder of the brood and bees which is now set over the super-cover, and also to furnish an exit for the bees, as fast as they hatch, to pass out of where they enter a chute

made of lath that leads to within ¼ inch of the hive-entrance. When they return honey-laden they go directly into the lower chamber where the queen is, and, there being no drawn cells to store their treasures in, they are forced to enter the supers at once. In 21 days all the brood will have hatched, and the bees have joined the busy force below.

I find the above plan of Mr. Evans objectionable, as the nurse bees escape too soon, leaving much unsealed brood to dry up for want of care during the first nine days, or until all brood is sealed. Perhaps this objection may be overcome by inserting a small piece of perforated zinc in the super-cover, although I fear that the bees might then store honey in the combs as the brood hatches. Please ask Dr. Tinker about this last point.

If neither hive A nor B is very strong in bees, we shake off most of the bees from both to make the shook swarm, as such swarms are not satisfactory unless very strong. In this case we would, of course, leave one of the queens with the brood.

The shook swarm is one (not the) solution of the swarming problem in out-apiaries run for comb honey. This and the Aikin method will be used almost exclusively in our apiaries next year. When using the eight-frame L. hive for shook swarms a dummy may well be used to take the place of a frame or two. With the Heddon hive two sections must be used for the first few days or there is danger of desertion. When this danger is past, remove the lower case. However, if you find that shook swarms in a single shallow brood-case are inclined to store pollen in the sections, then when the upper case is full of combs replace the lower case with one containing full sheets of foundation. The bees will gradually work down into it, and work in the supers will go on as before. This I owe to L. Stachelhausen. The giving of one frame of brood is important, whatever the hive used, to prevent pollen in the sections, and to keep the bees contented. In this locality this frame of brood has not caused swarming out, contrary to the experience of Mr. Stachelhausen. With a brood-chamber of five or six L. frames capacity, full sheets of foundation may be used if the bees persist in building drone comb.

During a slow honey-flow we do not like the shook-swarm plan, as the queen, if the bees are Italians, will be crowded out, too much drone comb built from starters, and a very light crop will be the result. If a colony (with no thought of swarming) is doing excellent super work we would not think of making a shook swarm from it. We wire all frames for shook swarms. Note these points:

1. Shook swarms must be very strong.
2. A comb of brood will usually obviate danger of pollen in sections.
3. Supers must contain bait combs, or, better, be taken from colonies well at work in the sections.
4. In the arid region, with its cool nights, brood from shook swarms must always be under the care of a large force of bees, to prevent loss by chilling.
5. Last, and of great importance, the shook swarm must be strengthened several times during the flow. E. F. ATWATER.

Boise, Ida.

VALUABLE INFORMATION CONCERNING THE SHOOK-SWARM METHOD.

Evidently the time is now ripe for this method to become thoroughly practical. I practiced the method years ago when my colonies numbered from 100 to 125. I have advocated the method from the time of its discovery, and I wrote it up for *The Indiana Farmer* under the caption of "Swarming without Increase," and yet I have known of very few followers. Just to think of a swarm issuing and leaving a crate of unfinished sections, with the result that the season is exhausted before the parent hive is able to finish the sections! Why did the "shook" method fail to become popular long ago? I have returned swarms to the old stand, giving them the unfinished super, and frames with narrow starters, and, after brushing off every bee from the remaining brood, I have obtained better and more rapid results in the super than I was getting before the operation. I have always found that a queen-excluding honey-board was very essential, and the only objection to the entire method is that for a few days some pollen will be stored in the sections.

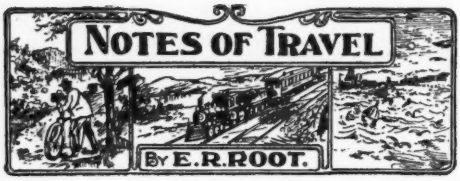
I have always disposed of the remaining brood in two ways—by strengthening weak colonies and by tiering up over an excluder for extracting. I have tiered as high as five stories, and it seemed to me that such colonies contained a barrel of bees. In such cases I allowed only three or four combs of brood in the lower chamber, filling the remainder of the hive with empty combs or foundation in order that the queen might have plenty of room. As fast as the brood hatched in upper stories they filled the empty cells with honey, making the way possible for a large yield, and greatly improving the results from the hives from which the brood was taken.

A few, in attempting this method, have allowed one or two combs of brood to remain in the brood-chamber. This is fatal to the results. The brood-chamber must contain frames with narrow starters only. The bees will proceed to build comb fast enough for the queen; and the new honey must necessarily be stored in the sections.

"This great country of ours" is fairly covered with a sod of white clover, and next year promises to be a glorious one for bee-keepers. I hope the "shook" method will be adopted by many, and thus increase the profits. WALTER S. POUDER.

Indianapolis, Ind.

Continued on page 863.



NORTHERN CALIFORNIA AND OREGON; SOME OBSERVATIONS ABOUT MOUNTAIN PEAKS; A FEW FIGURES REGARDING THE LUMBER PRODUCTION OF THE LATTER STATE.

Leaving Nicolaus, where we stopped to look over the carpet grass and to consider some of the fearful effects wrought on the country by placer mining, I took the train northward and made no other stop until I reached Portland, Oregon. I did not skip over the northern portion of California because there was nothing there in the bee-keeping line, but because of the limited time at my disposal, making it necessary for me to make one long jump to Portland. But I can not forbear making reference to the beautiful scenery on the way; and how, as we approached Mount Shasta, in the extreme northern part of California, we could see that peak, faintly at first, then more clearly, more grandly, until we were at the very base of it; and as we passed on beyond that royal old mountain it still kept in view. This is true of several other peaks of more or less prominence. Before we arrived at Portland the peaks of Mount St. Helen and Mount Hood stood up clear and distinct. In fact, I know of no prettier mountains to be seen in the United States than the two last named. While not so high by considerable as some other peaks, they stand up grandly and alone, clear above the surrounding mountain country; and they were nearer to my childhood's conception of how a *real* mountain should look than any thing I had ever seen. And, speaking about mountain scenery in general, a tenderfoot of the East, before he has seen much of this great rugged mountain country of the West, is apt to form the impression that a very high mountain stands up like a great shaft in the air, towering far above the surrounding country. With a few exceptions this conception is entirely erroneous. Some of the highest peaks in the United States are almost completely submerged amid the mountainous country all around about them —so much so that their great altitude is not apparent; but when we come to look at the summits of Mount Hood and Mount St. Helen we note a distinct difference. They are great cones capped with snow that stand upward clean and beautiful above the surrounding country; and as one looks at them from a distance of fifty miles he appears to be looking at something that is far higher than any thing he has seen before; and yet they lack several thousand feet of being as high as some of the peaks in Colorado and California.

I stopped in Portland for only a very short time. I found the country, as I had expected, neither hot nor cold. The temperature was delightful and pleasant. I had heard that it rained in Portland every day in the year, and this daily program was in nowise changed while I was in the city. But the rains come and go like our April showers here in the East—a light little dash that soon passes off, followed by the sun in all its glory as it plays peek-a-boo behind the clouds. I believe it is not necessary, at least during some seasons of the year, to carry an umbrella; for these little light sprays between, of but a few minutes' duration, can at most dampen the clothing, which soon dries off.

Bee-keeping throughout Oregon, so far as I could discover, is not carried on in the extensive way that it is in Central and Southern California, in Arizona, Colorado, and Texas. The apiaries are smaller, and the business, as nearly as I could judge, is not nearly as profitable, although I believe it is more sure of uniform results than in Southern California. As a honey State it would rank with Michigan and Illinois.

I was pleased to note the beautiful green, at least in the northern parts of Oregon. This was in delightful contrast to some of the arid portions of the West where I had been traveling. Clover and the natural grasses of the East were growing luxuriantly.

I met a number of local bee-keepers in the vicinity, particularly the supply dealers—among others Buell Lamberson's Sons and the Portland Seed Co., both of whom handle supplies. During the short time I was in the city I was entertained most hospitably by representatives of both companies and by some of the local bee-keepers who came in to meet me on the evening of my departure. I should be glad, if it were a matter of general interest to bee-keepers, to tell of the beautiful scenery up the Columbia River, which it was my pleasure to take in and enjoy, the general magnificence and grandeur of which, I am told, surpasses that on the Rhine. I should also like to tell something about the salmon fisheries, but all of this would be of little interest to our friends who are getting their bread and butter from the bees.

But it may be a matter of some interest to know that the time may come, and that within twenty or thirty years, when the lumber for all their hives will have to come from Oregon. The timber of Northern Michigan and from many portions of Canada is already very scarce; and when this supply is exhausted we shall have to look to California and Oregon for our supply of bee-hive boards. At the present time it is estimated that Oregon contains a much larger area of forest than any other State in the Union. So much is there of it, in fact, that the lumber is wasted. Some of the trees are cut 20 feet from the ground because at the butt they are too large to handle with the saws at the mills. Instead of

using a modern band-saw that will cut a kerf of only a sixteenth or the thirty-second of an inch, the mills use large circular saws that will cut a little faster, but which will cut a kerf five-eighths wide. Such a wanton waste seems almost wicked. Late statistics show that there are 235 billion feet of standing timber within the borders of Oregon; but there are 300 immense mills that cut in one season 670 million feet. At this terrible rate of slaughter and fearful wastefulness by using thick saws and leaving stumps 20 feet high, how long will it be before Oregon will be reduced to the condition of Michigan, Maine, and other States that once had lumber to burn? The State of Oregon should see to it, in the interest of future generations, that such wasteful methods within her own borders are stopped, and that right speedily.

REGARDING brushed swarms, several lay stress on the fact that bees should be smoked, drummed, or jarred in order to make them fill themselves with honey. In forcing a swarm we ought to bring about, as nearly as possible, the conditions that exist in a natural swarm. When nature sends out a swarm the bees fill themselves with honey; therefore when we force them we must make them store up a sufficient supply so that, when they begin to work in starters in the new hive, they will have enough to spare to commence comb-building in earnest.

RANCHING ON A LARGE SCALE.

IMMEDIATELY following the Denver convention I made a trip into Central Nebraska and there visited one of the most extensive ranchers in the world—Mr. H. D. Watkins, of Kearney. Mr. W. has 10,000 acres of land, 3000 of which are in alfalfa. You just ought to see those immense fields of bloom; the thousands of tons of hay in stacks; and how things are done in a truly wholesale way in the great West. Well, I am going to give you a chance to see. I took two dozen photographs, and later on I will give our readers something of an idea of alfalfa-growing on an immense scale. And here is a rancher who proposes to go into bee-keeping also on an immense scale. Just imagine, if you please, 3000 acres within bee-range, and within control of one man, then think what an apiary or two could do.

NOMENCLATURE; FORCED SWARMS.

ELSEWHERE Mr. H. R. Boardman, referring to shook or brushed swarms, suggests that we call them "artificial" swarms; for whether they be brushed, shaken, smoked, frightened, drummed, or jarred out of the hive, they become, in a certain sense, artificial, and therefore he would recommend the name *artificial* swarms. This term, it is true, is more comprehensive, but, unfortunately, it has been associated for many years in the text-books with the plan of simple dividing; i. e., taking out one set of combs from the hive, and putting them bodily, bees and all, into another hive on another stand. I would suggest that we use the word "forced" swarms, for that will describe either shook or brushed swarms, and avoid at the same time the ungrammatical adjective "shook." When we get the bees out of the hive by any of the processes named we *force* them out—we *make* them swarm, and if reports are to be believed we make them think that they have actually swarmed, and that, therefore, they must get down to business.

THE DENVER CONVENTION; A BRIEF REPORT OF THE PROCEEDINGS; MORNING SESSION, FIRST DAY.

I ARRIVED in time to hear Dr. Miller discuss the question, "The most hopeful field for the North American Bee-keepers' Association." The doctor did not really know which was the most hopeful field. A lot of good, he said, had been done by the Association in fighting the adulteration evil, and he hoped it could do much more. One field was in the line of what the general government could do for apiculture. He referred to what had been brought about for all the different branches of agriculture *except* bee-keeping; and then he stated that the United States was an exception to all fhe civilized countries in the fact that it did not give more substantial aid to apiculture. He was thankful personally that the government recognized us enough to appoint an Apicultural Investigator; and while this was good as far as it went, it might do more by placing at that official's disposal more funds by which certain lines of work could be carried out.

He believed that the Association should help individual States to get foul-brood laws —not that he believed it should pay all expenses of a lobbyist, but he thought it might offer at least small pecuniary aid, under certain reasonable restrictions.

Again, honey was a fine article of diet, and the Association might do a great deal to bring before the general public this fact by getting leading articles printed through the associated-press reports. Finally, there ought to be a closes connection between this Association and the government at Washington. Prof. Frank Benton, Apicultural Investigator, was doing a good work; and he hoped that he might tell us more about what he is doing.

The response to this was by Mr. E. T. Abbott, of St. Joseph, Mo. He spoke of the fact that some bee-keepers and some farmers do not succeed; and one of the reasons for this was ignorance; and he felt

that the Association could do a great deal of good by spreading such a lot of information from one side of the continent to the other as would do away with a great deal of this ignorance. Another factor that stood in the way was indifference. Men having natural ability, finely equipped in point of physical strength, seemingly have for a motto, "Let 'er go; we have enough to live on." If one shut his eyes, and put his thumbs behind his suspenders, "she" will "go" and nothing will be done. Such indifference one may find all over the country. Mr. Abbott pointed out several lines of work that could be done by the Association, but it needed men of nerve and determination who will undertake it with enthusiasm, without regard to result. There had never been a great reform unless some one was willing to lay himself on the altar. Ever since the day that Jesus of Nazareth cried out on Calvary, "It is finished," the work had been finished by self-sacrificing people who were willing to die, if need be, for the work they had in mind. At the close of this, Prof. Benton, Apicultural Investigator, who was present, was asked to tell something of his work, which he did. His first effort, he said, had been to secure the giant bees of India. This was set aside for the time. In the mean time the Department commissioned him to prepare some pamphlets relating to bee-keeping. These were issued by him in the form of bulletins, which had since gone through many editions. A great deal of his work was to answer inquiries that are sent in to the Department regarding the subject of bees.

Of late he had been importing various races of bees, and placed the queens in various apiaries throughout the United States to be tested, mention of which has already been made in the journals. He had been testing all the known systems for rearing queens, and the results of his experiments have been duly recorded. In the line of future work he thought the government might be induced to make the statistics relating to bee-keeping more exact, for those now issued were not entirely reliable. The government could send out the blanks, which could be returned filled out, from which reports could be summarized for the general bee-keeping industry. In conclusion he stated that he would be glad to receive suggestions as to how he might make his work more useful to bee-keepers and to the Association. Subsequently a resolution was adopted, endorsing Prof. Benton's work, by the convention as a whole, and praying the Department of Agriculture to enlarge the scope of his work.

At the close of the discussions following Mr. Benton's talk, Mr. Taylor, Superintendent of the Agricultural Building of the Universal Exposition at St. Louis, was introduced to the convention. He gave some idea of what said exposition would be, by saying that the management had ten times as much money to spend as the Pan-American, and he hoped bee-keepers would not be backward in saying how much space they would require and what they would expect that exposition to do for apiculture. He had come to receive suggestions, and would be pleased to hear from any one at the meeting. More anon.

THE SHOOK-SWARM SYMPOSIUM IN THIS ISSUE; POSSIBILITIES THAT ARE SAID TO ACCRUE FROM THE PRACTICE.

IN our last issue, and again in this one, we have collated a series of articles on the brushed or shook swarm method of handling bees. It is a little surprising, not to say amazing, that so many have been using the plan, and all, with one exception, report it a success for controlling swarming for producing comb honey, for curing foul brood—in short, putting the question of swarming at a time when the apiarist can handle it when he has the most leisure, and can do it himself without hiring extra help.

There have been comparatively few articles on the subject till quite lately. Two years ago Mr. L. Stachelhausen—see page 840, Nov 1, 1900, first brought it to the attention of American bee-keepers in such a way that they began to grasp and did grasp the value of the shook-swarm method so persistently advocated in Germany. It is evident the article made a deep impression, far and wide, if we may judge from the number who read it and have since tested the plan for two seasons, and are now so enthusiastic that some are ready to cry out "Eureka!" because they believe the long-looked-for solution of the swarming problem with *small* brood-chamber has come. Whether or not we have reached that most desirable goal I will not pretend to say. But there is some evidence before us that seems to indicate very strongly that some have "got there" and are reaping the benefits, both in the amount of comb honey and in the matter of reducing the labor. Let us review briefly some of the results claimed:

1. Swarming can be controlled at outyards with small brood-chambers, when run for comb honey. This is of tremendous importance, if true.

2. A brushed swarm may be stronger and produce more comb honey than a natural one, because the former may have *all* the flying bees, and subsequently receive, at a second drive, the brood that is hatched from the parent colony. If reports may be believed, such a powerful force of bees in one brood-nest means a larger yield of comb honey.

3. It appears that starters are just as good as full sheets of foundation, under some conditions at least. If this is true, it will save buying some brood foundation. If a young queen is in the hive, and the supers are put on soon enough, it is asserted that worker brood will be reared about as fast as the queen can take it. But suppose that drone comb is built out instead of worker, no great harm results, it is argued;

for such comb can be cut out and melted up, for every one knows that wax sells at a good price; and some there are who believe that wax and comb honey can be produced simultaneously, with profit and to advantage.

Yes, it has even been urged in times past that, in a heavy honey-flow, bees will secrete wax *involuntarily;* that if wax scales are not used in comb-building they will be wasted. The inference is, that the brushed swarm with foundation starters can and does utilize this surplus wax. If this be true, the foundation bill can be cut down seventy-five per cent, and, in addition, save wax scales.

4. Another incidental result—that pointed out by Mr. Howe in this issue—is that foul brood can be kept under control; for the brushed-swarm plan has some of the principal features of the McEvoy treatment of curing this disease. I believe there may be something in this; for years ago in our own yards we cured something like fifty or sixty colonies of foul brood by merely shaking the bees on frames of foundation. Then the plan of brushing the swarms, or shaking them, will hold either foul brood or black brood in check, and perhaps cure it altogether in localities where the disease is raging.

But there is one question that still remains; viz., "Does the brushing or shaking of bees into new quarters put them in that *mood* or *condition* where they *think* or *feel* that they have actually gone out into the wide world, and found a new home, the same as a *natural* swarm?" From the evidence in hand it would seem that the new method of *forcing* swarms has the same effect on the bees, to all intents and purposes, as the old method of letting the swarms come out *ad libitum* on Sunday, or washdays, at inconvenient times, when the master of the house or the boss of the bees "has gone to town." *If*—understand, I do not make the claim myself—swarming *can* be brought about at convenient seasons, when the bee-master himself can perform all the work; and if such swarms go to work contentedly and behave in all respects like a natural swarm, then we are utilizing one of the most important discoveries that have been brought before the bee-keeping world for many years. I call it a *discovery.* I do not mean by that that it is something that has recently been brought to light by us, for, if I am correct, Gravenhorst, years ago, began to talk through his own periodical in Germany about the possibilities that could and did accrue from the treatment.

In all the foregoing I have suggested some wonderful possibilities. Now, please understand me that *I* do not individually claim that the swarming problem is solved—that more comb honey can be produced, nor am I sponsor for some of the other claims. I am only setting forth briefly some of the points suggested by our correspondents; and I am hopeful enough myself to believe that some of these good things (almost too good to be true) *are* true. When such conservative men as Stachelhausen, Boardman, Gill, the late Gravenhorst, and a score of others, speak highly in its praise—men who are very careful not to indorse a new thing unless it has real merit—then we younger chaps may well sit at the feet of these modern Gamaliels and learn something—possibly to our profit.

BOTTLING HONEY—HOW THE WORK IS DONE IN A SMALL WAY AT THE A. I. ROOT COMPANY'S PLANT.

THIS is the season for bottling honey; and although we have published several articles on the subject we have not shown by illustration just how we do the work here.

I do not claim that our method is the best, or one calculated to give the largest results with a minimum of labor. We use the plan because our bottling trade is small, and because we can put up the honey in clear limpid form in small lots just as fast as our trade calls for it, and no faster. It is not necessary for us to bring to a liquid state three or four hundred pounds of honey in one lot. We can put up a dozen bottles or we can put up several gross at a time, depending on the circumstances; and while the subjoined illustration shows six or seven people at work at once, we rarely have, in fact, in our own bottling-room more than two people. But as the work progresses these two change position as indicated by A and B, by C and D, etc. But before we begin our bottling work we must have the honey.

We aim, in the first place, to make a blend of honey which we can duplicate from year to year. It is not practical, in our locality, to get a strictly pure clover or strictly pure basswood some seasons. As a rule, much of our honey is a mixed clover and basswood; but sometimes both are scarce, and we can "piece out" a crop by mixing a fine grade of alfalfa or sage. For our own trade we make a blend of several of the best grades of honey, and always send out that formula. The result is, the trade gets educated to it, is satisfied with it, and the taste remains practically the same from year to year. But if one were to put out one year a practically pure clover and another year a basswood, and still another, when neither was to be obtained, a sage or alfalfa, he would get complaints at once that his honey was adulterated, because "the last lot did not taste like the first."

Having determined on the blend, pour the proper quantity of each honey to be bottled into a large tin can, and mix. This receiving-tank should hold not less than 200 lbs., and, better, 500 lbs., and should have a quick-closing honey-gate. In the absence of any thing better, an extractor-can with the baskets and the cross-arm removed serves a very excellent purpose. Directly under the gate there should be a tray or pan on a lower shelf. Here the bottles are filled,

and any dripping is caught on the pan. Now, then, we are ready for the bottling. We must understand that the honey in this large can is cold. If, however, it can be stood near the stove or a coil of pipes, all the better, for honey will run freer when it is warm.

We now need a square or oblong galvanized-iron pan as large as the whole top of the stove, with perpendicular sides, and about six or seven inches deep. If a gasoline-stove is used, the pan should be as long and as broad as the top; and if the three burners are on the same level, all the better. The pan should be just about the depth of an ordinary Mason jar; or, rather, the depth of the deepest package to be used for bottling purposes. A false bottom of coarse wire cloth should be secured about half an inch above the bottom proper by means of suitable stays. This is for the purpose of providing a circulation of water under the bottoms of the bottles of honey, for otherwise they might break. Fill the pan about half full of water, and set it on the stove. When the water registers about 180 according to the thermometer, set into the tray, on the false bottom of wire cloth, the bottles of honey that have just been filled from the large filling-tank above referred to. When the pan is full of bottles placed close together, the water should be raised to within about an inch of the top of the bottles. Let them stand in the hot water until the honey in one of the bottles registers about 160. They may now be taken out and corked or sealed. A fresh supply of filled bottles of honey should next be put back to replace the first lot, and the operation of heating and sealing can be continued indefinitely. Two persons, by following out this plan, can put up something like a thousand Muth jars in a day. But why do we prefer this plan of heating honey to that of heating in bulk? For these reasons:

1. One can fill a small order at any time; and it is not necessary to heat a great bulk of honey in order to put up a dozen bottles or so of honey. In heating a large quantity of honey, one necessarily has to keep it hot a great length of time. The longer the honey is kept hot the greater the liability to discolor and impair its flavor.

2. Bottles that are submerged in hot water can be easily wiped off with a cloth; and as soon as they are corked or sealed they are ready for labeling.

3. The honey that has been poured into the vessels, either cold or hot, will have collected a large number of air-bubbles; and it is these particles of air that have a tendency to hasten granulation. When the honey is heated gradually in the bottles after filling, the process expels the air-bubbles; and by the time the honey is clear it is ready for sealing and labeling.

4. If any honey should candy on your hands, unseal, and set the bottles in the tray of hot water, and reheat and seal without emptying. When the honey has to be heated in bulk the bottles have to be emptied and washed, which is not an easy job with candied honey, and, after heating, refilled.

BOTTLING HONEY AS PRACTICED BY THE AUTHORS.

The method already described is shown in the illustration above. Boy A draws the honey cold from a large honey-tank into the bottles, which are then put into the tray on the gasoline-stove uncorked, and allowed to stand in the hot water until the honey in the jars has reached the right temperature. B then picks the bottles out one by one, and hands them over to C, who simply picks up the corks and inserts them about an eighth of an inch into the mouths of the bottles. They are next passed on to D, who forces the corks into the jars so that the top of the cork is about an eighth of an inch below the top of the mouth of the bottle. A larger view of the same thing is shown in the next illustration. The lever D has a cleat nailed across one end. On each side are nailed corks of different sizes. By turning the lever one way or the other, and inserting in one of the notches, different heights can be secured for different heights of bottles. The pressure on lever K forces the cork into the mouth of the bottle. D next passes the bottles on to E, who pours paraffine over the tops filling up the space so it will be flush. Remember the corks were inserted below the mouth of the bottle about an eighth of an inch. The paraffine is kept hot on a little lamp stove. E then passes the bottle on to the next one, who puts on the labels. The large heating tray, as will be seen, is on a gasoline-stove. The tray is made of galvanized iron, and each has T-tins running transversely across the coarse mesh wire cloth. On this are placed the bottles while being heated.

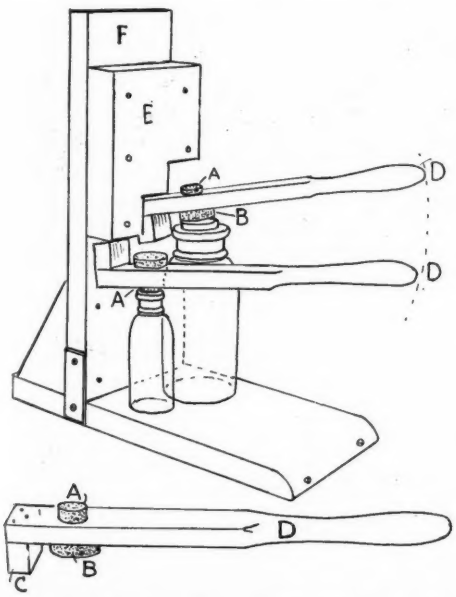
WASHING AND CLEANING BOTTLES.

Prepare several tubs of water—one with strong suds — and then have on hand a few ounces of shot—No. 6 is about right. If particles of glass or dirt cling to the inside of the bottles, pour in four or five ounces of shot and give the bottle a shaking. This will dislodge all particles, when the shot may be poured into another bottle, to be similarly treated. In rinsing, use clear soft water. Hard water is liable to leave traces of sediment. Any glass package used for honey designed for table purposes should be spotlessly clean.

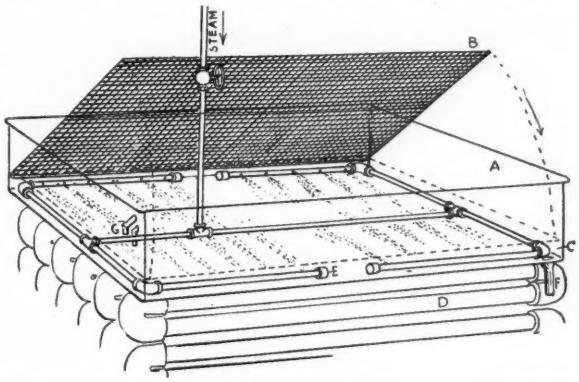
HOW TO INSERT CORKS IN BOTTLES.

Two or three methods are employed. One is, to use a rubber mallet, which can be purchased at any of the rubber-stores. The ends of the mallet being soft, a cork that is barely entered can be driven into the bottle with a blow.

Another plan is to use a lever, as shown at D, in cut. This lever should have a projection on the under side so the cork can be forced down into the bottle about a sixteenth of an inch. It is important, after corking, to pour a layer of paraffine or wax over the top of the cork. Some go so far as to dip the corks into hot paraffine, then pour a hot layer on top after they are



inserted in the bottles. Nay, some go even further. After the corks have been paraffined they put on a neat tinfoil top. If the honey has been heated above 160, and sealed while hot, and the cork is made impervious, the honey will remain liquid for months. I have seen samples of honey put up in Muth jars that have been kept in a refrigerator



HEATING-TRAY AS USED AT THE ROOT CO.'S FACTORY.

Instead of using a gasoline-stove to heat the water in the tray we use ⅜-inch steam-pipes connected as in the manner shown. The outside pipes are perforated with holes that blow a jet of steam transversely across the bottom of the pan. The wire cloth rests on the pipes. The coil of steam-pipes below serves no purpose but to keep the large filling-tank of honey warm.

six months, and yet it would remain perfectly clear all the time. But do not advise your grocer customers to put honey in a cold place. The bottles should not be handled more than is necessary, but should be kept in a warm place at as uniform a temperature as possible.

I assume that no directions are necessary for sealing packages using rubber rings. I would only say this: That you must be sure you make the sealing as tight as possible. In the case of Mason jars, screw the tops down with a wrench, and *screw them down tight.*

In sealing jelly-tumblers, cut squares of paper (preferably paraffined paper) about the size of the top of the tumbler. When the jar is filled, put the paper on top of the jar, and squeeze the top down with the palm of the hand, putting a large part of the weight of the body on it. If the top goes down too easily, use thicker paper or two thicknesses.

MOVING BEES TO AN OUT-APIARY AT MEDINA; THE ELECTRIC RAILWAY AND OUT-APIARIES.

It will be remembered that we stated we were establishing out-apiaries along the line of our new electric railway. We concluded it would be better to scatter our bees in four or five different yards rather than feed sugar in one locality and have the bees all together. The aforesaid electric road would enable our men to go to and from the yards, with a minimum consumption of time, and so far this season the plan is working very nicely, for the fall flow is heavier than usual.

After we had loaded up one load of bees that was about starting on its journey for

and any dripping is caught on the pan. Now, then, we are ready for the bottling. We must understand that the honey in this large can is cold. If, however, it can be stood near the stove or a coil of pipes, all the better, for honey will run freer when it is warm.

We now need a square or oblong galvanized-iron pan as large as the whole top of the stove, with perpendicular sides, and about six or seven inches deep. If a gasoline-stove is used, the pan should be as long and as broad as the top; and if the three burners are on the same level, all the better. The pan should be just about the depth of an ordinary Mason jar; or, rather, the depth of the deepest package to be used for bottling purposes. A false bottom of coarse wire cloth should be secured about half an inch above the bottom proper by means of suitable stays. This is for the purpose of providing a circulation of water under the bottoms of the bottles of honey, for otherwise they might break. Fill the pan about half full of water, and set it on the stove. When the water registers about 180 according to the thermometer, set into the tray, on the false bottom of wire cloth, the bottles of honey that have just been filled from the large filling-tank above referred to. When the pan is full of bottles placed close together, the water should be raised to within about an inch of the top of the bottles. Let them stand in the hot water until the honey in one of the bottles registers about 160. They may now be taken out and corked or sealed. A fresh supply of filled bottles of honey should next be put back to replace the first lot, and the operation of heating and sealing can be continued indefinitely. Two persons, by following out this plan, can put up something like a thousand Muth jars in a day. But why do we prefer this plan of heating honey to that of heating in bulk? For these reasons:

1. One can fill a small order at any time; and it is not necessary to heat a great bulk of honey in order to put up a dozen bottles or so of honey. In heating a large quantity of honey, one necessarily has to keep it hot a great length of time. The longer the honey is kept hot the greater the liability to discolor and impair its flavor.

2. Bottles that are submerged in hot water can be easily wiped off with a cloth; and as soon as they are corked or sealed they are ready for labeling.

3. The honey that has been poured into the vessels, either cold or hot, will have collected a large number of air-bubbles; and it is these particles of air that have a tendency to hasten granulation. When the honey is heated gradually in the bottles after filling, the process expels the air-bubbles; and by the time the honey is clear it is ready for sealing and labeling.

4. If any honey should candy on your hands, unseal, and set the bottles in the tray of hot water, and reheat and seal without emptying. When the honey has to be heated in bulk the bottles have to be emptied and washed, which is not an easy job with candied honey, and, after heating, refilled.

BOTTLING HONEY AS PRACTICED BY THE AUTHORS.

The method already described is shown in the illustration above. Boy A draws the honey cold from a large honey-tank into the bottles, which are then put into the tray on the gasoline-stove uncorked, and allowed to stand in the hot water until the honey in the jars has reached the right temperature. B then picks the bottles out one by one, and hands them over to C, who simply picks up the corks and inserts them about an eighth of an inch into the mouths of the bottles. They are next passed on to D, who forces the corks into the jars so that the top of the cork is about an eighth of an inch below the top of the mouth of the bottle. A larger view of the same thing is shown in the next illustration. The lever D has a cleat nailed across one end. On each side are nailed corks of different sizes. By turning the lever one way or the other, and inserting in one of the notches, different heights can be secured for different heights of bottles. The pressure on lever K forces the cork into the mouth of the bottle. D next passes the bottles on to E, who pours paraffine over the tops filling up the space so it will be flush. Remember the corks were inserted below the mouth of the bottle about an eighth of an inch. The paraffine is kept hot on a little lamp stove. E then passes the bottle on to the next one, who puts on the labels. The large heating tray, as will be seen, is on a gasoline-stove. The tray is made of galvanized iron, and each has T-tins running transversely across the coarse mesh wire cloth. On this are placed the bottles while being heated.

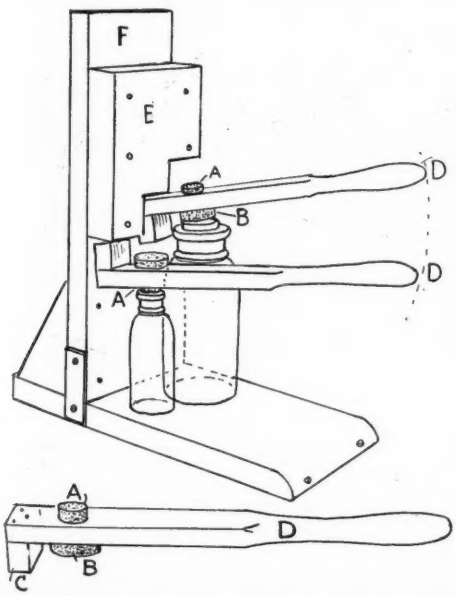
WASHING AND CLEANING BOTTLES.

Prepare several tubs of water—one with strong suds — and then have on hand a few ounces of shot—No. 6 is about right. If particles of glass or dirt cling to the inside of the bottles, pour in four or five ounces of shot and give the bottle a shaking. This will dislodge all particles, when the shot may be poured into another bottle, to be similarly treated. In rinsing, use clear soft water. Hard water is liable to leave traces of sediment. Any glass package used for honey designed for table purposes should be spotlessly clean.

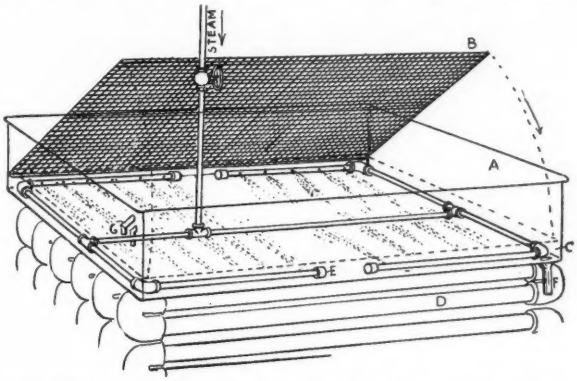
HOW TO INSERT CORKS IN BOTTLES.

Two or three methods are employed. One is, to use a rubber mallet, which can be purchased at any of the rubber-stores. The ends of the mallet being soft, a cork that is barely entered can be driven into the bottle with a blow.

Another plan is to use a lever, as shown at D, in cut. This lever should have a projection on the under side so the cork can be forced down into the bottle about a sixteenth of an inch. It is important, after corking, to pour a layer of paraffine or wax over the top of the cork. Some go so far as to dip the corks into hot paraffine, then pour a hot layer on top after they are



inserted in the bottles. Nay, some go even further. After the corks have been paraffined they put on a neat tinfoil top. If the honey has been heated above 160, and sealed while hot, and the cork is made impervious, the honey will remain liquid for months. I have seen samples of honey put up in Muth jars that have been kept in a refrigerator



HEATING-TRAY AS USED AT THE ROOT CO.'S FACTORY.

Instead of using a gasoline-stove to heat the water in the tray we use ⅜-inch steam-pipes connected as in the manner shown. The outside pipes are perforated with holes that blow a jet of steam transversely across the bottom of the pan. The wire cloth rests on the pipes. The coil of steam-pipes below serves no purpose but to keep the large filling-tank of honey warm.

six months, and yet it would remain perfectly clear all the time. But do not advise your grocer customers to put honey in a cold place. The bottles should not be handled more than is necessary, but should be kept in a warm place at as uniform a temperature as possible.

I assume that no directions are necessary for sealing packages using rubber rings. I would only say this: That you must be sure you make the sealing as tight as possible. In the case of Mason jars, screw the tops down with a wrench, and *screw them down tight.*

In sealing jelly-tumblers, cut squares of paper (preferably paraffined paper) about the size of the top of the tumbler. When the jar is filled, put the paper on top of the jar, and squeeze the top down with the palm of the hand, putting a large part of the weight of the body on it. If the top goes down too easily, use thicker paper or two thicknesses.

MOVING BEES TO AN OUT-APIARY AT MEDINA; THE ELECTRIC RAILWAY AND OUT-APIARIES.

It will be remembered that we stated we were establishing out-apiaries along the line of our new electric railway. We concluded it would be better to scatter our bees in four or five different yards rather than feed sugar in one locality and have the bees all together. The aforesaid electric road would enable our men to go to and from the yards, with a minimum consumption of time, and so far this season the plan is working very nicely, for the fall flow is heavier than usual.

After we had loaded up one load of bees that was about starting on its journey for

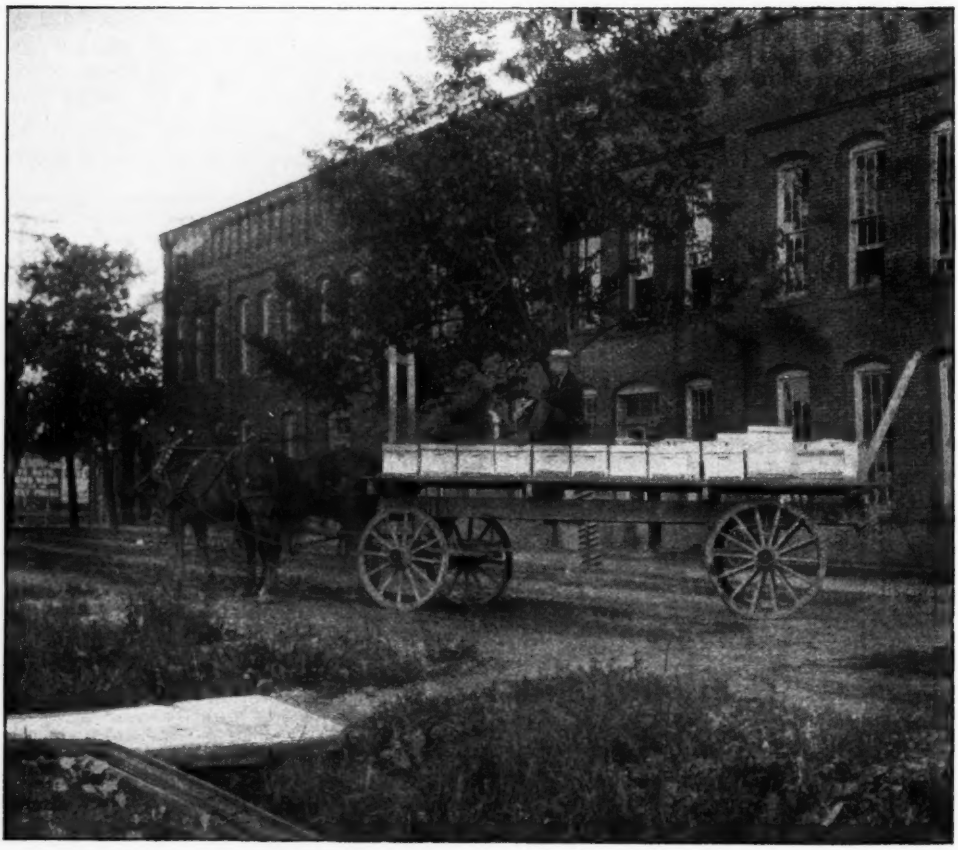
one of the yards I took a photo, and this I present before you. In this case we used the ordinary wagon with high wheels and hay-rack on top, with 35 colonies on the load. The driver sits in front, while the apiarist sits in the rear to watch the bees. The driver, on arriving at the outyard, leaves the bees and the man, who, after he has got the colonies in proper position, entrance-screens removed, takes the next car for home or for the next yard on the line.

We were thinking somewhat of having the bees, as soon as the cars get up to our factory, loaded right on to the baggage-car, and unloaded again at one of the outyards, which shall be close to the railroad. In this way, if the charges are not too great, we shall dispense with horses entirely.

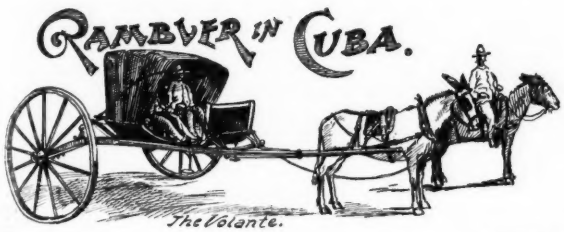
The electric railway is going to solve many of the problems connected with outapiaries. It will enable one or two men to take care of several apiaries; save the expense of wagons and horses, and at the same time do away with the danger of having a runaway or horses stung to death, and perhaps having the bees scattered for miles up and down the road. It takes not to exceed ten minutes to get to any one yard under the present plan, from the home yard. From the yard furthest north to the one furthest south is about ten miles, and yet each yard is within a comparatively few minutes of the home apiary. Five and at most ten cents will take the man to the yard, without fatigue; and when he finishes his work he can take the next car and drop off at the next yard.

So far we have not carried out the plan in all its fullest details, because the electric road is not yet completed, and at present we have to drive to one of the yards; but I can see possibilities in the handling of bees by electricity, so to speak, for a young man of limited capital who can not afford to keep a team of horses and a set of wagons.

There is still another point to consider: When the honey is finally taken off the hives it can be delivered right to the market, without any hauling. The problem of outyards is one of transportation, and the electric line comes very near solving it.



THE ROOT CO.'S TEAM AND A LOAD OF BEES FOR AN OUTYARD; A PART OF THE MAIN BUILDING IN THE BACKGROUND.



RAMBLE 212.

The Isle of Pines as a Honey Country.

BY RAMBLER.

After visiting Mr. Folksdorf, and taking in the beauties of the little bay that broke the monotony of his farm, we all joined our real-estate men and spent a good share of the day in looking at land and getting to the next important town, Santa Fe, almost 10 miles inland. The government has graded a fine road to this town, and the wheeling was fine. It was while on this road that we were impressed with the idea that we were indeed upon the Isle of Pines, for the timber was of that kind, and there was much of it. The soil, much of it, was a coarse red gravel, also much soil particularly adapted to the cultivation of tobacco.

At Santa Fe are mineral springs, and for 150 years it has been a resort for the well-to-do people of Cuba. Yellow fever is unknown here, and the temperature not extreme at any portion of the year.

The hotel-keeper where we abode for two days was also a grocer and storekeeper. He called our attention to quite a pile of beeswax in his store. With Mr. Moe as interpreter I learned that the wax was purchased from a native bee-keeper who owned about 300 colonies three leagues from town, and secured about 7 lbs. of wax to the hive. The honey was drained off in Cuban style, and all of it fed back to the bees. The honey here is usually put into "garaphones."

Over on the south side of the island there is a native with 1200 colonies, and his yield was turned mostly to wax. From the size of the native apiaries in that direction, that portion of the island is evidently a better place for bees.

Some have compared the piney portion of the isle to the pine barrens of Florida, with the exception that a different and better soil prevails here. But certainly Mr. Moe and I would not think of planting an apiary in this portion of the island. While the piney portion is the most elevated, the south coast is nearer the sea level, and the vegetation different, and may contain more honey flora. The timber is different, the pine scarce, and there is a great amount of mahogany and other valuable timber. The native who had to feed his bees to tide them over was near the pineries.

The largest shipment of bees to the isle was made in 1901 by Mr. Hilas Davis, of Vermont. He shipped 200 colonies to the Columbia Settlement, and although we did not get around to see this apiary, we were informed that the bees were barely making a living, and at a time when the honey harvest was on in Cuba. Mr. Davis had a partner in this venture, and, for some reason Mr. Davis sold his interest and returned to Vermont. I learned, as late as March, that the bees were doing better. The owner had just purchased 5 lbs. of foundation at the Root Co.'s headquarters to send over to this apiary of 200 colonies. I certainly hope that the bees have done better since.

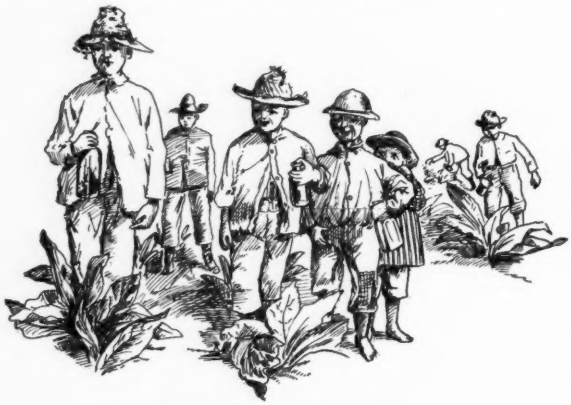
It would be unfair for me to say that the Isle of Pines is altogether unfit for profitable bee-keeping. There may be excellent locations; but Mr. Moe and I, in our few days' visit, saw nothing that would induce us to put an apiary there. Those who hold out rose-colored inducements to that effect are those who have but little knowledge of bees, and who think that a honey-yield can be gathered from a few orange-trees or from the flora of the front flower-yard of some residence. As a very sensible person said, who has been on the island two years, and who has cast his lot there, "This whole proposition of bee culture, fruits, and garden truck is wholly, so far, an experiment, and will be until the trees are bearing shiploads of fruit, and the gardens producing the same of winter vegetables. It is also an experiment until it is decided that it is United States land, and until regular lines of steamers are run direct to the States."

It is hoped that the experiment will prove successful, for there are good and worthy men and women on the isle who deserve a rich reward for their toil.

A portion of the Davis bees shipped to the Isle of Pines were in the Davis hive; and while talking with him at the home

OFF FOR THE INTERIOR.

apiary of Bro. Brown, of Tulipan, and learning that he stood it on end for wintering in the cold climate of Vermont, my memory jogged back several years to a conven-



THE TOBACCO-BUG BOYS.

tion in Albany, N. Y., where I saw the same hive and principle, and Mr. Davis with it, and here we were again, met in Cuba under the palms. The hive does not receive much attention here, except from the inventor; and now he has returned to Vermont, the hive will probably be discarded.

Somehow Mr. Davis had allowed something to sour his mind against all bee associations and all bee journals, and he appeared to me like a man looking for trouble, and, as is usual in such cases, he got what he is looking for. He is something of a manufacturer of bee-supplies, and almost his parting word to me was that he was going back to Vermont to knock out the Root Co. in the supply business. I told him I was real sorry for him, for he had a big contract on his hands.

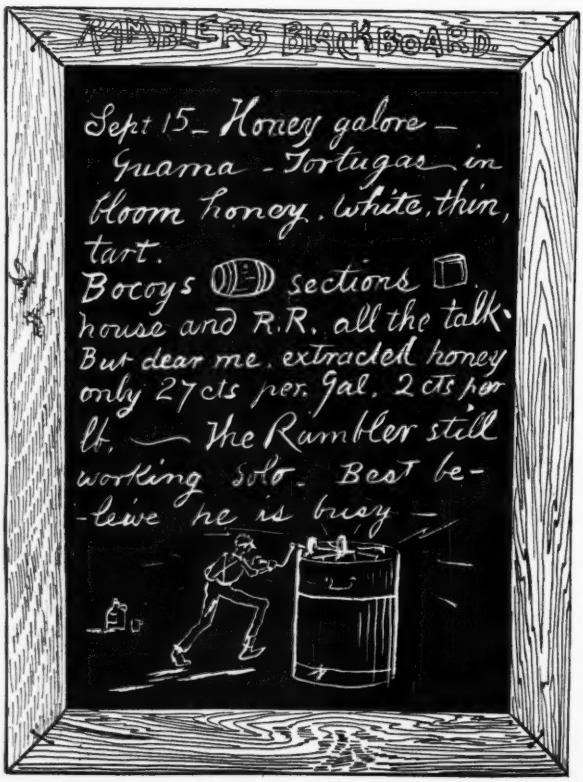
Besides the shipment of bees by Mr. Davis to the Isle of Pines, there have been a few other shipments, but which have not made much of a record.

Santa Fe is a delightful old town. Then there was such a pleasant party of us! Two gentlemen from the Central States; Mr. Storms, from Minneapolis; the Rambler, from California. Our real-estate men proposed to show us land and climate in solid chunks. They said we could not use our wheels on this route, so we mounted mules, and Mr. Storms and Mr. Moe were stowed into a volante. The photo shows what an animated crowd we were when ready to start; and the volante such an antiquated vehicle, with such a weight upon the poor mule's back! the other mule is attached to the vehicle with ropes, and our Jehu mounts him; and, such a Jehu! his lash is going all the time, accompanied by his shouting. In the United States such cruelty to the poor beasts would not be tolerated. There is one consolation — the volante is seldom used; they are almost out of date.

On this day's trip I saw the first coffee-plantation. The little blossoms on this shrub are very fragrant, and the bees work upon them with enthusiasm; but they last for only a day, and the period of bloom is short.

The land here is what they call mulatto soil, and the best land in the world for tobacco. All along our trip were tobacco-farms, and here they made those 50-cent cigars—or, rather, they are sold in the States for 50 cts. and $1.00.

Here in this wilderness is an old lady who has made thousands of cigars, and she smokes several of those 50-ct. cigars every day. My traveling companions all had cigars, and extolled their mildness, richness, and flavor. I did not pay much attention to their talk until all of a sudden I thought


RAMBLERS BLACKBOARD.
Sept 15 — Honey galore — Guama - Tortugas in bloom honey. White, thin, tart.
Bocoys sections house and R.R. all the talk.
But dear me. extracted honey only 27 cts per. Gal. 2 cts per lb. — The Rambler still working solo. Best be-
-leive he is busy —

of the following passage of scripture: "And the earth brought forth grass and herb yielding seed after its kind, and the tree yielding fruit whose seed was in itself after its kind; and God saw that it was good."—GEN. 1:12.

Tobacco was created for some good purpose, surely. Now, I have been troubled for several years with insomnia, and have tried various remedies. It occurred to me that I had never tried smoking a cigar. Now was the opportunity while in the best cigar country in the world; and the next time Mr. Cody offered me a cigar (he had his pockets full) I accepted one, to his evident surprise; and, what is more, I smoked it to a finish. I was surprised, in my turn, at the ease with which I smoked it, and without the least nausea. I slept well that night in the old hotel at Santa Fe, and, more, I came in from the 20-mile mule-back ride that day the least fatigued of any man in the crowd, except, of course, the real-estate man and the Jehu of the volante. But, dear reader, my remedy was of short effect, and my smoking of short duration. I am troubled with insomnia yet.

Tobacco has many enemies; and from the time the seed is sown until the curing, constant vigilance is necessary. When the plant is tender, bugs or slugs like those on potatoes are prevalent. I present herewith a photo of the potato-bug boys. They were picking slugs and putting them in the bottles shown in their hands. From the appearance of the central youth you will note that, though this photo was taken in January, he was lightly clothed.* These country boys wear no shirts, and many grown men are dressed the same.

If I have dealt more in real estate than in bees and honey in these Rambles in the Isle of Pines, it is clearly the fault of the island to supply the material. The isle is not up to Cuba as a honey-producer. To the person who wishes to build a beautiful home in a generous and healthful climate, and isolated far from the wear and tear of business, and far from friends and relatives, far from libraries and lectures, far from the daily press and your favorite periodicals, far from rail and electric roads, then the Isle of Pines presents all of the conditions necessary.

THREE GREAT HONEY-PLANTS.

The Date Palm, Cocoanut Palm, and Royal Palm.

BY W. K. MORRISON.

The date palm (*Phœnix dactylifera*) is known almost universally as a useful tree. The dried fruit is sold wherever civilization extends, and yet it is not, I think, known as a first-rate honey-plant, producing a large amount of nectar in its flowers, which bees greedily collect. Sometimes I have counted as many as 200 bees on a single flower; and the first time my attention was attracted to this phenomenon I almost laughed outright at the way the bees *sat down* to sip the nectar, for that is about the only expression that will convey to the mind of my readers the manner in which bees get the sweet nectar.

As the date-tree is of the first economic importance, it follows that this is a great acquisition to our list of honey-producing plants. It is now some years since it was first known to the writer in this aspect of a nectar-producer, and having carefully watched it in various localities I place it high among the list of bee-plants. There are various locations where the date palm will flourish in the United States and Australia, and these are just the places, probably, where bee-men most require a honey-plant that is a thorough drouth-resister. In Arizona, California, and Florida there ought to be a future for this tree in its dual role of a fruit-giver and nectar-bearer. True, it does not stand much cold, but some of its congeners may. The wild date, of India, is hardier, and this produces sugar after the manner of a maple, so we are not without hopes of extension northward. Any way, both are very tough plants and easy of handling, growing readily from seed. Probably the kinds grown for house decoration, *Phœnix rupicola*, *P. tenuis*, and *P. reclinata* are good honey-plants, but I have had no means of discovering the fact.

The cocoanut palm (*Cocoa nucifera*) is, in my opinion, by far the most important of all the palms. Its usefulness to man is almost incredible to persons unacquainted with the tropics. The timber is very useful and very durable when properly handled; the leaves are used for a variety of purposes; the coir, or fiber, which covers the nut, is known to everybody who has seen a cocoanut mat; and the nut (or, rather, the kernel of the nut) is known to all. The green cocoanut furnishes a drink that is both very palatable and refreshing in hot countries. It is, indeed, a great delicacy. The meat of the nut is one of the most useful foods of the tropics, for the reason that it supplies both nitrogen and fat—two things that are very much lacking in most tropical fruits. Instead of lard or olive oil the tropical inhabitants use the oil of the cocoanut, and, to my taste, it is superior to either, for it has a sweet nutty flavor. If doughnuts are made in cocoanut oil they have a nutty taste that adds much to their palatability. The cocoanut palm flourishes all around the tropic seas, for it is a plant which requires a little salt in its food, and it is usually seen nodding over some tropic ocean strand. Mr. Cook, who has charge of the tropical work of the United States Department of Agriculture, has formulated a theory that the cocoanut is a native of the interior valleys of the Andes, in Colombia and Ecuador, where there are salt lakes. If this is so it opens up possibilities for the culture of cocoanuts in entirely new localities hitherto deemed unsuitable.

* Our artist seems to have put on a coat and a shirt —ED.

The idea has long prevailed that the cocoa palm was native to the coasts of the Eastern seas. This will undoubtedly prove to be an error. If Mr. Cook's theory prove to be the correct one, the cocoanut palm may be grown inland, in which case bee-keepers will be furnished with another string to their bow, one on which they can rely.

I do not think it is quite as good a honey-yielder as the date, though there is probably not much to choose between them. In Florida the cocoanut has undoubtedly a future. The largest grove of cocoanuts is said to be in Florida, and probably more will be planted for years to come, since the United States must prove a fine market for the product. There are other species of cocoas in South America, but I do not know their value as honey-plants.

The royal palm (*Oredoxa regia*) is known already to many of the readers of GLEANINGS as a honey-plant. It has the drawback that it is grown only for ornament, though it is often cut down for the "cabbage" it contains, which is the soft unfolded green leaf. In the "English" island of the West Indies it is known as the cabbage palm — a very prosaic name for a very elegant specimen of the vegetable kingdom. The palms are the princes of the vegetable kingdom, and the royal palm their king. Some botanists have distinguished another species of *Oredoxa;* viz., *Oleracea*, but, I think, without rhyme or reason — certainly with bad taste when they term it *Oleracea*. It gratifies the bee-keepers to know that so noble a tree is an extra good producer of honey. Large numbers of these fine palms have been ruthlessly destroyed in the West Indies for their cabbage—almost exterminated in some islands—but with the advance in civilization more will be planted as avenue trees and for decorative effect.

The Greek architects are said to have copied the palm when they designed their beautiful columnar style of masonry. Whether this is so or not, it is a queer specimen of a man who is not struck with a feeling of admiration when viewing an avenue of these splendid productions of nature.

If the onlooker is a bee-keeper he has the added satisfaction that the trees he beholds are excellent honey-bearers, and it rather flatters a bee-keeper's pride when he discovers that the date, the cocoanut, and the palmiste are plants the little bee delights in. Curiously enough, royal-palm honey and mahogany are much alike in all respects.

BLEACHING COMB HONEY.

A Suggestion in Regard to the Burning of Sulphur; A Cheap and Effective Wax-press.

BY J. A. CRANE.

Mr. Root:—Allow me to make a suggestion in regard to the burning of sulphur for the purpose of bleaching comb honey. Mr. J. E. Crane says he could not make the cold smoke draw through the clamps of honey. Now, I never tried to make smoke go through a stack of honey, but I have followed it through all or nearly all sorts of fruit-bleachers, from the old basket in a barrel covered with a sack or something, to the latest steam-driven bleachers and sliding-box bleachers of the present day, having used personally seven different apparatus for the purpose, and having bleached more than 50,000 bushels of apples. and burned tons of brimstone. First, the only method of burning brimstone now practiced is the cup method, which is as follows: Have a cup made of sheet iron, or, better, cast iron, that will hold from a pint to a quart. Put in as much brimstone as you need, crumbled fine. Take another piece, large enough to hold easily; light a match; hold it to the lower edge of your brimstone; let it melt and burn, and drop into the cup, when it will gradually melt and burn — a veritable lake of fire and brimstone. Now, when you have your cup going, place it in a box with a pipe leading to your bleach-box, entering at the bottom of the front end. Next have a stovepipe leaving your bleach-box from the top of the back end, entering a chimney or other flue with a strong hot-air draft from a stove or furnace. I draw sulphur smoke through eleven feet of apples in crates in this way continuously for several months at a time when running my evaporator in the fall, and am sure the same plan will work satisfactorily with honey.

I should also like to describe, for the benefit of others who have a few bees and some wax, but not enough to pay to buy a wax-extractor, a press of mine which costs but little and is effective, and easy to operate. First get a large old-style pit-bottom dinner-pot. Remove the bale; make a false bottom of ¾ x ⅞ hard-wood strips fastened together by tacking on strips of tin so it will lie on the shoulder formed by the top of the pit. Next take some hoop iron and make two hoops just large enough to fit inside the kettle on top of the slat bottom. Then make some more hard-wood slats, ⅝ x ¾, just long enough to reach from the top of the slat bottom to the top of the pot. Nail these inside the hoops, ⅜ inch apart, one hoop at the top and one at the bottom. Make a circular follower to fit inside your hoop. Next take a piece of 2x3 hard wood, long enough to reach across the pot; bore two ⅜-inch holes near the ends so that they come just over the ears of the pot; cut off the heads of two ⅜ bolts; bend a hook on them to hook into the ears of the pot. Now get an apple-barrel press-screw; bore a hole in the center of your cross-piece for the nut; place the nut on the under side, and your press is done. Place the pot on the stove; fill one-third with water; put in the slat bottom and hoop. Take a piece of burlap, or, better, grain-bag, large enough to line the hoop, and leave quite large corners sticking out over the top. As soon as the water boils, begin to put in your old

combs or other wax; pack down with a stick, and stir it a little until you get in as much as you can handle. Keep the water and wax at the boiling-point; fold over the corners of the cloth; put in the follower; put on the cross-piece; hook the bent bolts into the ears of the pot; turn down the nuts; now turn down the screw as far as it will go, then loosen and press again. Take the whole thing by the screw-handle and pour off as much clear wax as you can; remove screw; take out the hoop; dump the slumgum, and proceed as before. This is a press that cost me 43 cents. Mine is large enough to press about 25 combs at once, and will work nearly as fast as I can tell the story, and will get about all the wax there is in the blackest old combs I ever saw.

The object of the strong draft to the bleacher is that the smoke is taken away and does not settle on the fruit and discolor it. Why not the same with honey?

Marion, N. Y., June 21.

SHOOK SWARMS.

Behave in all Respects Like a Natural One; Never Shake all the Bees.

BY L. M. GULDEN.

Mr. Root:—In compliance with your repeated requests for experiences with the "shook swarm" method of controlling increase I will contribute my mite. Having purchased an apiary of about twenty colonies of bees to place in a region where basswood abounded, at a distace of seven miles from home, I began to consider the various methods of controlling increase in outyards. As there was no one at the outyard to look after the swarms, if any should issue, and as I wished to run entirely for comb honey, I was at a loss to find any information at all definite as to the management of increase. The "shook swarm" method naturally suggested itself; and as I have practiced it this season with this particular yard it has worked to perfection.

Before the swarming season I went to the yard and clipped all the queens so that, in case I mismanaged in any way, I would not lose a "prime" swarm (Doolittle). I then went to the outyard about once a week to see how they were getting on. As soon as I expected swarming to begin I went through all the hives and gave them a thorough examination. I noted all the conditions of each colony, and kept a record of it. If any colony was preparing to swarm I could tell almost to a day when they were likely to issue. I did not divide the colony as soon as it became populous, as was suggested by some, but waited until it would have swarmed naturally, or very near that time. I managed so that it was necessary to visit the yard only twice a week. If a colony showed no sign of swarming at one examination I did not disturb them for a week. At the end of that time I went over the whole brood-chamber again. I much prefer the Hoffman frame with shortened top-bars when so much manipulation of brood-frames is necessary.

When the proper time arrived, or what I thought so, I gave the colony to be divided a few puffs of smoke, if necessary, and set it to one side of the old stand with the entrance turned at right angles to its first position. I then placed a hive with empty frames or combs on the old stand, and, after having first found the old queen, I shook the bees from the frames into the empty hive, and let the queen go in with them. This procedure works like a charm, as the bees are in the same mood as when a swarm issues naturally, and walk into the hive just as if they were being hived from the cluster where they would have settled. They immediately went to work cleaning house and furnishing it; and, so far as I can see, did fully as well at gathering honey as any natural swarm. The old colony was either left in the position it was placed, and moved to a new location at the end of a week, or immediately placed on a new stand. I much prefer putting them on a new stand and giving them immediately a ripe queen-cell or virgin queen; but when this is impossible I cut out all the queen-cells a day or two before the first queen would issue, reserving the best one, and then examining them again to find out if the queen had emerged all right.

Right here let me sound a note of warning to the advice of shaking *all* the bees into the new hive when dividing. In my divisions I took particular pains to determine the best amount of bees to leave in the old hive, and I wish to say that considerable harm may come from too close dividing. I have carefully observed the condition of brood and eggs in the old hive when dividing, and again a few days afterward, and find that, unless a considerable number are left in the hive, large patches of young larvæ would die in the cells and turn black. Some frames in which were eggs were also found to be empty at a subsequent examination. Remember, this did not occur in cold weather, but in the very hottest part of the year. I have also observed that nature is not always the most economical in her ways, or at least does not appear to be so. On examining colonies a few days after they had cast a swarm I found practically they same conditions as I have described when making too close a division in the artificial way.

I will practice dividing on a greater scale hereafter, as I am convinced that, when it is properly done, just as good results may be obtained as by the natural way, and often much inconvenience to the apiarist may be circumvented.

In practicing the "shook swarm" method I lost only one swarm. I made the division the same as with the other colonies, but placed a comb of brood in the hive with the swarm, having purposely taken one having a queen-cell on it by way of experiment. When the young queen emerged she eloped

with a swarm for parts unknown, leaving the old lady to take care of the house. Will Doolittle kindly tell us if this was a prime swarm, first swarm, or what it was?

Osakis, Minn., Sept. 1.

ADVANTAGES OF THE "SHOOK" SWARM METHOD; HOW IT SAVES HIRING HELP, AND HOW IT CAUSES THE COMB HONEY TO BE WHITER.

I find that brushed or "shook" swarming has several advantages over natural swarming. In the first place, you don't have to watch for swarms a greater part of the time; and where out-apiaries are run, a great saving is the result; and more honey is obtained, because the swarming is done at the commencement of the flow, the bees being brushed on wired frames with half-inch starters with excluder on. Supers filled with drawn combs, the bees simply have to store in the super — nowhere else to put the honey.

The honey is capped whiter. As you well know, you get whiter-capped sections over newly built combs, and the honey will bring a far better price. I brush on eight frames, leaving the swarm on the old stand, leveling the hive so as to have true combs; and after the queen begins to lay I remove three frames, filling the space with dummies. I also remove the excluder at the same time, as the bees seem to work some better; and I rarely find brood in sections after the queen begins to lay in the brood-nest. I had only one do so this year in 150 colonies. After they get the five frames filled with comb, remove dummies and fill the space with combs, or frames filled with full sheets of foundation. If you have young vigorous queens you won't have much drone comb.

I give my queens all the combs they can occupy, from early in spring until the honey-flow, which comes here about the last week in June. We have a slow flow from the first of April, enough to cause the bees to build up fast, and swarm if they didn't have plenty of room. Of course, I have rousing swarms. If they are crowded at first I put an empty body under the hive until they begin work, then I remove it and contract to five frames, and put on two or more supers filled with drawn combs; and if there is any honey in the flowers the bees will get it.

Don't expect honey from a weak stand. Don't expect to get a rousing big colony in one eight-frame brood-nest. Don't hive or brush swarms on drawn combs. Don't give a frame of brood and the rest of the frames with starters.

Brush on wired frames with ½-inch starters to get best results. If all bees are brushed from the old hive, fill the entrance with green leaves to keep out robbers. If you get more combs than needed, cull out all undesirable ones and render into wax.

By the "shook-swarm" method I ran 150 colonies this season, and have taken off 7000 lbs. of honey. I also ran a truck-farm and garden and small dairy with the help of my two small sons.

Before I adopted the brushed-swarm method I had to have a hired hand; but now I save his board and wages, and get more honey in better shape. I am of the opinion there are more practicing the "shook-swarm" method than you are aware of.

J. T. HAIRSTON.

Salina, I. T., Sept. 6.

THE SHOOK-SWARM METHOD AS A REMEDY FOR BLACK BROOD.

We had had but little experience in this line until last spring, when our bees were nearly all dead with a disease we think was black brood. We burned some, hive and all, and brushed some that left us in a day or two.

We saved only two—one a very small one, and the other was building up well, so we did not treat that. By a little stimulative feeding the strong colony swarmed May 13, and was hived on the old stand with full sheets of foundation. The old hive, which we will call No. 2, was removed to a new stand. This hive was left as it was till the young queen began to lay, when all was brushed from these empty combs on to new foundation and a clean hive.

Now, colony No. 1, or the one with the old queen, swarmed out July 4, but returned to the hive; and on examination we found they had sealed queen-cells. We now took all the brood and a few bees from this hive and formed two nuclei, and left the queen and most of the bees on the old stand with new frames full of foundation.

Hive No. 2 cast a good swarm Aug. 2, having a young queen hatched in the hive this year. (All rules fail sometimes, you see.) No. 2 swarmed again August 11, which, when the young queen had begun laying, was returned to the parent hive. Now, what I wish to bring to prominence is this: Notwithstanding each of these colonies was robbed of *all* its combs once during the season, yet hive No. 1 has stored 50 lbs. of section honey, and No. 2 stored 30 lbs., and each will have enough for winter.

We have made three nucleus swarms from these, so we have six good colonies and 80 lbs. of honey from the one good colony in the spring.

The weak colony that was treated for black brood in the spring was given a virgin queen in place of the old one, and they have built up nicely, but have lately developed a little disease. We have moved them a mile from home, where there are no bees; and when they are about through raising brood for the season we intend to brush them off and fumigate their combs with formalin, according to Prof. Harrison's plan, then return the combs to the colony for winter feed, and see if the disease will show itself again in the spring.

Black brood, or whatever the disease is, that is in this vicinity, has made nearly a

clean sweep of all bees in several townships here. We had 27 colonies two years ago, and last spring we got down to 2.

Ludlow Center, Mass. L. PERHAM.

TRYING TO CHECK NATURAL SWARMING BY BRUSHING NOT ALWAYS A SUCCESS.

There were about 70 colonies 30 miles from home, which were strong at the beginning of the honey season. About three weeks before this, a hive with empty combs was placed under each colony, making two eight-frame hives for a brood-nest. The entrances were made one inch deep, and shade-boards were placed on the covers. When the yield from clover began, I confined the queens to the lower stories with excluders, and placed under each colony a story with frames having foundation starters only. This made for each a story of empty combs above the excluder, with one of brood and one of empty frames below it. All this was done to discourage swarming.

The weather was hot and the nectar was very thin. In five or six days they began to swarm. Each swarm was returned after putting the excluder down on the story with empty frames and removing the queen-cells. In fifteen or twenty colonies I now placed the excluders over the empty frames and put the queens below them. The next day a number of them so fixed swarmed, and some that had swarmed before did so again.

I concluded to brush the rest at once. I shook the queen and bees into the lower stories of a number of hives, leaving the brood beside the parent hive with bees enough to care for it. This brought the story of empty combs down on the excluder over the empty frames. Several of these swarmed the next day. I now shook a lot, giving them nothing but the empty frames, but they still swarmed from them. Then I tried some with two stories of empty frames. That was better, but no sure thing. At the same time, I was using every means that I knew to induce them to stay in the empty frames. I gave some a frame of unsealed brood, some a frame of sealed brood, and some had only empty frames. Some would swarm out once after being shaken; some, two or three times. If they came out from empty frames I would give them a frame of brood; if from a hive with a frame of brood, I would take it away. I also placed a few in a new location. All these combinations failed more or less. About thirty per cent swarmed after being shaken, and, what was worse, part of them two or three times in a day or two. But every thing went very well after they settled down.

The best method I could choose from these variations is this: Jar the hive roughly before shaking out, so the bees shall fill themselves well with honey. Next, shake the bees into a hive of empty frames on the old stand, leaving enough bees to care for the brood. If the swarm does not have plenty of room in one story, give them two. In two days, put on the surplus arrangements. By that time comb-building is well started for the queen to lay, and the swarms remained better than when the supers were put on at the time they were shaken out.

I think the season was unusual for swarming. But the point is, brushing failed to prevent swarming to a reasonable extent, in this case. Most of the colonies had not started queen-cells when brushed. The method gives good results, however, and I like it better than removing queens.

Ada, O., Sept. 8. C. G. LUFT.

[This case was unusual. The bees throughout the yard had gotten the swarming fever to an unusual extent before you tried the expedient of brushing swarms to check their furor. When an apiary becomes demoralized like this, no repressive measures could bring relief. When bees get agoing like this they seem determined to have their fun out and they do. If you made any mistake, it was in giving too much room at the start. You discouraged them by giving more room than they could keep warm. If you had not put that second story under the brood-nest nor used the perforated zinc the result would have been different. To curtail the egg-laying of the queen at the wrong time will very often induce swarming.—ED.]

A PRACTICAL HINT AS TO THE METHOD OF "SHAKING;" A QUESTION.

I notice you ask bee-keepers to give their experience with shook or brushed swarms. My experience is limited but satisfactory. This season I had quite a number of swarms issue and then return to the hive from which they issued. Instead of waiting and watching for the bees to come out again I put a hive filled with empty combs or frames of foundation on the stand of the swarming colony, and shook the bees off from the combs of the colony in front of the prepared hive. If the swarming had occurred in June instead of August I should have used frames with starters of foundation for the swarm. I use the word "shook" advisedly, because, as a matter of fact, I did not brush the bees at all. Brushing angers the bees more than shaking, and takes twice as long to do the work. There is a knack about shaking that is easily learned. Place the fore finger and middle finger of each hand under the shoulders of the top-bar, and the thumb of each hand above. Draw the frame upward a little and then make a sudden downward movement. This is arrested by the fingers under the shoulder of the frame, and throws the bees off their guard. A second movement detaches nearly all of them. Those that are left on the combs are allowed to remain to care for the brood and protect the hive. More colonies would have been treated as above if I had been physically able to perform the labor. In future, when a honey-flow is on and I have strong colonies that are doing little or

nothing in the supers while other colonies are storing rapidly, I shall have the bees shaken into the prepared hives as soon as the above-named conditions come under my observation. When these conditions prevail I have always found that there is a congested brood-chamber. The queen is forced to stop laying because every cell is filled with honey as fast as the brood hatches. Why the bees will not store above when there is plenty of room to do so is something I do not understand. Sometimes these idle bees prepare for swarming by starting queen-cells, and sometimes they do not. In either case the sooner their discontent with conditions in the brood-chamber is overcome, the sooner work in the upper stories will be resumed. E. BEVINS.

Leon, Ia.

SHAKING SWARMS ON THE INSTALLMENT PLAN; A UNIQUE SCHEME TO GET DRAWN COMBS FOR SECTIONS.

This season above all others I remember —with only two or three good honey days— has caused me to look at swarming as a useless waste of time—to the bees at least. Now, the way I shook my swarms is not unlike the man who decided to cut the tail off his dog. Thinking it would be too much of a shock to the dog to take it all off at once he decided to take it off on the installment plan — an inch or two at a time as he could spare it. I don't like to let my bees get ready to swarm; for if they do they act disappointed unless allowed to. Therefore at the proper time I take away one, two, or three frames of brood as I think best, and replace them with frames containing starters an inch wide or more. Yes, the first thing the bees do is to build drone comb, and that, too, with a vengeance; but before there is brood in it I cut it out and let them commence over again. I use this comb in the sections; and here let me say I use little but drawn comb in sections. Perhaps you pity me for being so foolish; but never mind. Should there be eggs in this drone comb, leave it where it is cool for a day or so, and they won't hatch.

My bees will get to work in sections filled with drawn comb before they will attempt to swarm, providing there is one or more frames in the brood-chamber in which they can build comb. With this plan I never think of watching for swarms, as some of my bees are at outyards with no one in charge of them.

Now, then, when I get plenty of sections, filled with drawn comb, and the bees at work in them, and honey coming in, I "shook" the rest of the frames containing brood, and replace them with frames with starters only. Now about those frames of brood. I put a lot of them together, somewhat destitute of bees, with a young queen; and as the brood hatches out it soon gets to be strong with bees. I then take away part of the combs and put on sections; and if plenty of sections are given, it seldom attempts to swarm. But those shook swarms, after the summer is over and the harvest ended, will up and swarm some warm day — at least that is what they have been doing of late. D. S. HALL.

South Cabot, Vt.

A METHOD WHEREBY THE BEES ARE NOT SHAKEN FROM THE INSIDE OF THE OLD HIVE.

I have practiced the shook-swarm method for years with good success, but I do not shake the bees from the inside of the old hive, for by that means the old queen may get into the new hive. The proper way is to get a new hive ready with foundation and one or two frames of brood without bees. Take it near a hive that is in condition to spare a swarm, and if they are clustered out at the entrance, so much the better. Put a caged queen into the new hive; for if either hive is left to raise a queen it will take nearly a month, which means valuable time lost, and about half of the bees will die of old age. After giving them a little smoke so that they will not fly much nor sting, brush them off the outside of the hive and carry it to a new place. Set the new hive on the old location, and the job is done.

All the bees that were clustered out, as well as the field workers, will be in the new hive, and they will keep coming from the old hive to the new one for several days.

One will readily see that it is an improvement on natural swarming, for both hives have a laying queen, and will not raise any, consequently there are never any after-swarms. WM. REYNOLDS.

Corwall-on-Hudson, N. Y., Sept. 21.

A BELIEVER IN SHOOK SWARMS.

I worked two colonies this way this season, and they did better than any of the rest in the apiary. Each of them gave about 125 lbs. of extracted honey, and the old colony (that is, the frames of brood) gave a crate of sections, 21 in a crate. They worked for all they were worth, and never thought of swarming, although they were crowded out behind the division-board so as to build comb there. I think this a splendid plan to overcome swarming. I intend running largely on this plan next year.

CHRIS. GRIMOLDBY.

Owen Sound, Can.

THE SHOOK-SWARM PLAN SPECIALLY APPLICABLE FOR OUT-APIARIES.

You ask for the experience of those who have practiced the system of shook or brushed swarms. I should like to say that I have found the system most excellent, especially for *out-apiaries*, as it seems to come as near preventing swarming as we can come to it. I have practiced it ever since Mr. Stachelhausen told us about it in GLEANINGS, and shall hold on to it until something better is offered.

Pomona, Cal. M. R. KUEHNE.

NOMINATIONS FOR GENERAL MANAGER.

Mr. Root:—As there is now practically no nomination of any one to succeed Hon. Eugene Secor as General Manager of the National Bee-keepers' Association, to be elected next December, I consulted with some of our leading bee-keepers at the Denver convention, and since, and it is thought best to nominate Mr. N. E. France, of Platteville, Wis., for the position, which I now do. Not having an intimate personal acquaintance with him I have taken pains to make inquiries regarding his fitness for the position, and find that he is a thoroughly honest and capable business man; in the prime of life; temperate in all his habits; has tact; accustomed to speak in public; has labored unceasingly and unselfishly for the upbuilding of bee-keeping, having spent considerable of his own money and time in securing legislation in the interest of bee-keepers, and preventing the passage of laws that were opposed to their interests. He is one of the speakers at farmers' institutes, often neglecting his own business to work in the interest of bee-keepers. He manages several apiaries, and has produced hundreds of tons of honey. For several years he was Secretary of the Southwestern Wisconsin Bee-keepers' Association, and for ten years was its President. For several years he was Secretary of the Wisconsin State Bee-keepers' Association, and for four years has been its President. He secured the passage of the Wisconsin foulbrood law, and is State Inspector of foul brood.

I know of no one in our ranks better fitted to fill the office of General Manager of the National Bee-keepers' Association than is Mr. France, and I hope he will receive the hearty support of the members at the election in December next. A. B. MASON.

Sta. B, Toledo, O., Oct. 6.

CATNIP AND RASPBERRY AS HONEY-PRODUCING PLANTS.

I have some catnip honey this year for the first time; and although it is mixed with smartweed slightly, all pronounce it the best honey they ever tasted. Nearly all hedges near here are full of it. It does best in low hedges or brush-piles, where the roots are in rich soil and protected from the heat of the sun. I have sown nearly all waste places, and have about 5 lbs. left, and am gathering more.

I consider it very valuable because I have never known it to fail, and it is now 20 years since I first noticed it. It blooms from July 1 till frost, and bees are always busy on it. I have always classed it as a plant that produced honey of extra-fine quality, and well liked by the bees; but I never get any surplus from it unless clover, sweet clover, or smartweed was in bloom. I think it never yields profusely, but perhaps a large field would be different. However, I think sweet clover and raspberry pay best of all honey-producing plants around here.

This year my bees swarmed on raspberry; and, being in the fruit business any way, I intend to plant extensively of raspberry. From the way the plant does here, if I could get it to bloom all summer, or as long as catnip, I could beat even Dr. Gandy, in a small way. Raspberry always yields profusely, and bees tumble in the hives as if working on basswood. I shall give more attention to bees. If I live I want to increase to 100 colonies next year. I look for an extra-good year, because we have lots of white clover, sweet clover, catnip, basswood, and fruit-trees.

I am sorry you have raised the price of hives; but I shall have to have them just the same. You are about perfection in hive-making. I consider the best hive for my use is the eight-frame and L. Ideal super, with shallow extracting-frames between, as per the Barber plan, with ventilated gable cover. This year I have decided that, without shallow frames, the bees are almost sure to crowd the queen too much.

Although I consider catnip a good honey-producing plant, I believe all readers should be cautioned not to get excited over it, because, no doubt, in a few years it will be a thing of the past (that is, a good honey-plant, but not any better than nor as good as some others). I have great faith in raspberry, and predict great things from it; and as there are now several kinds of ever bearing ones I shall test them the coming year.

While keeping bees here (12 years) I have never had to feed for winter stores (except nuclei), and never lost a colony in wintering from starvation, except nuclei or late after-swarms. Perhaps catnip honey is the cause. J. E. JOHNSON.

Williamsfield, Ill., Sept. 22.

BLIGHT-PROOF PEARS.

In the article of J. E. Johnson, page 779, he says, "My pear-orchard is on high clay land; trees white with bloom, and no blight whatever. I have only such as do not blight—Keiffer, Garber, and Dutchess." Now, I wish Mr. Johnson could step over on my high clay hill and take a peep at my pear-trees, of which I have 15 varieties. All have blighted very badly. Some of my Garbers have blighted every limb down to the trunk, and were loaded with pears which dried up, leaving some still hanging on the trees. I have about 60 stands of bees that hum from tree to tree.

Mr. Johnson says, "If men will plant the right varieties on suitable land they need not worry about trees or blight." To me this is a wild declaration. If he is able to select such varieties and such land for planting as will make the trees immune to the blight, a fortune awaits him. My experience along this line covers a period of more than 40 years. I have planted on all kinds of soil, and even on sod; have given thorough cultivation, and tried many remedies, all of which have failed. The trees would blight—some not till the trees came in bearing, some sooner.

For 25 years I have bought and planted all the new varieties as introduced, only to meet failure, and I do not believe there is such a thing as a blight-proof pear in Illinois—yes, I might say in the Central States. I could not tell (without hunting up my records) how many varieties I have tested in my time, but the number is large.

I do not believe that bees scatter the blight, for many trees blight and die long before they bloom. My observations lead me to believe the blight is a sap disease, not caused by bees or any other kind of insect. J. W. C. Gray.

Atwood, Ill., Sept. 21.

DANGER OF USING VERY FINE WIRE CLOTH; A SAFE METHOD OF INTRODUCING QUEENS.

On page 739 B. Passage gives his method of keeping queens. It is the same as I have used, and is ordinarily safe. However, on page 275, Langstroth on the Honeybee, we find this warning: "The meshes of the wire cloth should not be closer than 12 to the inch, that the bees may feed the queen readily through them. This is important, as we have lost two queens successively in a cage with closer meshes. The bees will cultivate an acquaintance."

I use this "acquaintance" in introducing queens where safety is wanted more than quick introduction. About six days before a queen is expected I go to the hive and find the queen and leave her in the hive as Mr. P. describes, thus having this one to liberate in case the new queen arrives dead. When the new queen arrives I open the cage and release the escort (this is done by holding the finger over the end after removing the perforated metal, and working them out carefully with an awl. It is quicker to kill them with the awl, but I hate to after they have guarded their mother so faithfully hundreds of miles). I then open the hive and remove the old queen. I now place the future mother in her stead, having previously tacked a good strong piece of pasteboard over the wire where the candy lies, to keep the bees from eating away the candy from the side. Two days later I again open the hive, and the bees will be found just "loving" her. Then I destroy *all* queen-cells, catching a few bees (young ones, I have used old without loss). I put them into the cage, also a drone or two just for luck, although she seems offended at this, remove the cork, and finish the candy method. In putting in the escort I watch their behavior toward their queen; and any bee showing fight is instantly pierced through the meshes of the cage with the awl.

It is well to remember, when you introduce a queen with an escort of strange bees, you are introducing seven or eight bees instead of one; and is it not these strange bees (workers) that cause much more resentment than the queen herself? In giving an escort you have a queen accepted by a portion of the colony, however small it may be, to say nothing of the advantage of the same odor.

I feel myself much indebted to Mr. Bonney, for it was *his* method, varied to my "notion," which saves me many a good queen. I have known bees to kill their own queen when she was liberated, if all cells were not cut, so a caution is needed.

G. A. Bostwick.

Verbank Village, N. Y., Sept. 8.

THE METHOD THAT A BUSY HOUSEKEEPER USES FOR TRANSFERRING COMBS FROM THE L. FRAME TO THE DANZENBAKER; HIVE-MATS MADE FROM WINDOW-SHADES.

After brushing the bees off clean I take the hive holding them on a Daisy wheelbarrow up to the house, and do my work on the dining-table, using a hive-cover on which to put my L. frames.

After cutting out the comb the D. frame is put over the piece; and usually, when I lift up the frame, the comb comes up nicely. The fastenings will stay in until it can be fastened with two wires. The combs may be used over and over again.

I put the hive with the transferred comb lengthwise on the wheelbarrow, and they have never broken or slipped in taking to the yard.

I use an oyster-knife to open the hives; and when I take these wires off I slip the blade under the wire, and pry up a little until it comes unfastened. I take all the wires off before I take a single frame out to turn them over as they belong. The handle of an oyster-knife is about 4 inches long by ¾ inch square, and the three-inch blade is two-edged, dull, and pointed at the end. I had it made at the blacksmith's, and use it constantly. The handle is a hammer if need be, and the blade to pry or scrape with. I keep two, so if one is lost I still have one to use.

In working this way I keep a basin and my pancake-turner in it on the table by me; and from every frame I scrape up all liquid honey and pieces. I also have a basin of water with a good-sized cloth, to keep my hands clean; and in doing this I have every thing comfortable, and make no muss.

For mats I use some pieces of window-shades which were too wide for my windows, and had to be cut off. I sewed some

of these strips together, lapped one edge over the other on the sewing-machine, with long stitches. After ironing them with a hot iron they make fine mats. There is a paraffine finish on them that is just the thing.

When I am through I put the old frames in a hive at the other end of the yard, and leave a little opening for the bees to get at them to clean them up. On the cover of the hive with the transferred combs, I set the basin of honey and scraps, and over all I turn the cover that I used in cutting comb. In this way the bees will clean every thing up in good order, and with no robbing.

Sometimes the bottom-bar of the D. frame seems to be bowed out when I lift up the frame. I used to take it out and cut off a little more, but now I just press on the bar till it comes down all right. The comb is in better, and it squeezes the honey only by the top-bar, which doesn't matter.

MRS. C. A. S.

BITTER HONEY; BRUSHED SWARMS IN THE SOUTH.

In looking over your Sept. 15th number I notice your answers to my questions in regard to the bitter-weed honey, and it seems you have gotten the wrong idea about its being good for the bees during winter. It would be all right for them for winter stores provided we needed it, for it is a beautiful thick honey, but has the bitter taste, which is unpleasant.

In regard to brushed swarms I might add that I have tried them here with success. Here the bees swarm about April 15th, which is just at the beginning of a good honey-flow of about two to three weeks' duration, and a swarm hived at just this time usually gathers about two supers of comb honey. After this flow is over we have another interval of nearly a month during which there is a light flow, and then comes a fairly good flow, lasting about a month, when the bitter honey starts to coming in, and all good honey has to be taken off. Our bees never swarm here later than April 25th, and never during a heavy flow. Judging from what I read, I suppose they are entirely different from the Northern localities.

Under the conditions named I have found it very desirable to swarm all of the bees that are strong colonies just at the beginning of the honey-flow. My plan has been about as follows: Prepare the new hive, and place it in the location of the parent colony. Smoke the bees a little, and remove the super from the old hive to the new one, and then shake the bees from all but one of the frames, on the ground in front of the hew hive, seeing that the queen goes with them. This plan leaves enough bees to take care of the brood in the old colony, which should be placed alongside of the new colony, facing at right angles, and in ten days it may be moved and used in making up new colonies, and all of the field bees will go to the new colony. In preparing the brood-nest for the new colony I think I got best results where I used only six brood-frames the first week or ten days, and let all the frames be filled with full sheets of foundation except one, which should contain drawn-out combs. I tried one colony with all foundation, and the sections had combs partly drawn out, and the queen took up her abode in the super long enough to deposit eggs in several sections. When I used one frame of drawn comb in the brood-nest this trouble was avoided. My reason for using full sheets of foundation is that, in my opinion, the bees are not as well prepared for wax-building in brushed swarms as when they swarm naturally.

This plan has one advantage for me — I can swarm all of my bees when I have time, while if I waited for them to do it I could not possibly attend to them.

Hazlehurst, Miss. J. S. WISE.

THE ALKALI LANDS OF CALIFORNIA.

Friend Ernest:—Your Notes of Travel are always interesting, and always show a strong desire to state facts exactly as they are. Sometimes it seems you have been mistaken — have forgotten or been misinformed. Those little (?) willow-trees on the Flory ranch illustrate this fact. Those ten-year-old trees were good shade-trees in 1889; and Mr. Flory's old ram got much *solid* "amusement" by bumping his head against the trees, then perhaps a foot in diameter. As the land is rich and well watered they have made good growth since that time.

Your remarks on alkali are very clear for a tenderfoot. While Traver was never more than a third or a half the town that you speak of, it strongly illustrates what guesswork farming sometimes brings on surface thinkers. Our State University, Berkeley, Cal., can examine the ground and tell in advance how such land will turn out. Part of this county (Stanislaus) has enough alkali salts to ruin it completely when the "hardpan" is dissolved by irrigation, while we have some land that will last. Scientific tests are necessary in some cases, while in others experience and horse sense are sufficient guides.

W. A. H. GILSTRAP.

Modesto, Cal., Sept. 9.

WHY BEES SOMETIMES KILL THEIR YOUNG.

On page 778 the question was raised, "Why do bees sometimes carry out the young before they are hatched?"

I have such a case, and in looking the hive over found that they had hardly half a dozen cells of honey by the 15th of June. I put two sections of honey in a super, and, after uncapping a few cells, found that the process of carrying out young bees was stopped.

Several more that began to act in this way were stopped merely by feeding, so I made up my mind that the bees do this when short of stores. C. K. CARTER.

Eagle Grove, Ia., Sept. 22.

ANOTHER PLUM STORY.

It was early in the morning. Earl was digging Triumph potatoes, and I was picking them up. Some of you may wonder that the president of The A. I. Root Co. should be *picking up potatoes*, a job that is usually given to the children or to the very cheapest kind of help. Why should a man who can, if he wishes, have a salary of—well, "considerable if not more," as my good father used to say—why should such a man be picking up potatoes when he couldn't earn (even at *two cents a bushel*) more than, say, 50 or 75 cents a day? Funny, isn't it? Well, in the first place God's sentence pronounced on Adam and his descendants, "In the sweat of thy face shalt thou eat bread," I have often thought fell with tremendous weight on me. I can remember, even when a child, that I could not only not "eat bread" with any enjoyment, but it almost seemed as if I could have no real pleasure in life unless I was hard at work at something. Of late years it seems as if this work *must be*, at least a great part of every day, in the open air. I enjoy writing at my desk, as I am doing now, about so long, and then it must be "outdoorses." Of course, I can *choose* my work, and I thank God for *that* privilege. My young friend Earl, for instance, must do what I bid him do, no matter how tired he gets of the one thing, hour after hour. He can stop work if he chooses, and have his pay stop; but that cuts off the bread and butter. But why not stand erect and do the digging myself, and let the *boy* get down in the dirt? Well, some of the time we do that way; but I rather like handling the red "beauties" myself. In this exceedingly mellow soil they are as smooth and perfect, most of them, as great red peaches, and I have just made an invention to relieve my back. I take a stout stave basket and place it on one corner so that I can rest my chest against the upper edge. Of course, I am on my knees in the soft dirt. Well, in this position I can lean forward and work with both hands. When there are no more within reach, with a froglike motion both basket and myself move forward a jump, and so on. I think the same thing may be done with a potato-box, but we have no boxes here as yet. In this way I can pick up pretty fast, and I can stand it for—well, say two hours. Earl can testify that I am not to be *depended on* to do one thing very long at a time. It happened so this morning; for, just as I had got well to going, a man with a horse and buggy was seen coming toward us through the potatoes.

I think we will let him stand a minute and rest his horse, for he has driven almost a dozen miles thus early, while I go back a little and explain to our readers that Mrs. Root is now in Ohio, and I have been for some days *alone* in the "cabin." On another page there is more about it. I had been very homesick, not for the Medina home but for the Medina *woman*. Indoors—in fact, at every turn—I met something that made me sick at heart. She is coming back in just a week, but I was thinking that morning I just *couldn't* wait *another* week. I *prayed* for my old interest and enthusiasm in the potatoes and other things, and then I went out and worked hard, just to "help God" answer my prayers. I *believe he* felt sorry for me, and pitied me,* and sent that man with the horse and buggy just to show his great love for me, poor and imperfect as I am.

It was Mr. J. P. Berg, the fruit-grower, who lives on the other side of the Bay. He said I was to get into his buggy and go over and see his crop of plums, ready to pick. When I told him there were reasons why I would rather get back that night he said:

"All right. We will see that you are back here before dark."

"Why, friend B., that will be a drive of *forty-four miles* in one day, just to have me see your plums. Isn't it more than I am really worth?"

Pretty soon I found that he, and, I think, the most of his family, are members of that church I have been trying to build up. They don't come here to our church *building*, but it is the same denomination, and all his family of boys and girls seemed glad to see me and are in hearty sympathy with my endeavor.

Almost before I got out of the buggy I saw the plum-trees bending beneath their great loads. They were so large that they looked like apples, but they were *blue* apples, and not red or yellow. Of course, we had to have dinner before going into the orchard. The crop was already sold, on the trees, at $2.00 per bushel. I tell you, friends, that is the way for a farmer to do business. Grow a crop of such excellence that the city men will go out and bid for it before it is matures. The plums were the German Prune and Grand Duke. Both kinds will keep several weeks, even after they are ripe and soft, without injury. What a contrast it was to sit down at that dinner-table, with a crowd of boys and girls (or, perhaps I should say, men and women), with the lonely meals I have been having at my home in the woods!

After dinner all hands went out to gather the fruit. Friend Berg has been years in the fruit business, and knows how to manage systematically. Four rather tall women (two of them his daughters) worked on a tree at once. They had baskets with hooks on the handles to hang on a limb. Now, besides these four nice-looking women there was a nice-looking boy and a girl. One of the two children picked the low-down plums near the trunk of the tree,

* As a father pitieth his children, so the Lord pitieth them that fear him.—PSALM 103 : 13.

where the tall women could not get them conveniently; and the other child, with a ladder, gathered the plums that were rather too high up for the long arms of the tallest woman. How long does it take to pick a tree, with such an "outfit"? Well, I looked at my watch and judged it took about ten minutes to pick a tree that gave two bushels; and, say, fifteen minutes for a three-bushel tree. How is that, friends—$6.00 for the fruit on a tree only four years planted, and the crop sold before it is picked? Mr. Berg keeps off curculio and rot by spraying — no bumping at all. I do not think one plum in a hundred was rotten. Even those on the ground were free from rot. The Grand Duke will average the size of small hens' eggs, and they hung on the limbs touching each other, like bunches of grapes. Mr. Berg trains and prunes all his trees low down, so the fruit is easily gathered, and the limbs often touch the ground, so there is very little breaking down. He has also a great crop of peaches, but scarcely a broken-down limb. One reason why fruit-buyers come to his place and buy his fruit is his nearness (only three miles) to Traverse City.

On our way home I met Mr. Dobson, whose plum-orchard I wrote up two years ago. He gave us an important item in regard to the value of spraying. On account of the excessive rain last spring he could *not* spray as much as usual. On one occasion they got at it for just half a day, during a critical time. They sprayed just *one side* of two rows of cherry-trees, and then rain came, so the other side of these trees was never sprayed at all. All these trees gave a fine crop *on one side*—none at all on the other. The cherries where he sprayed sold for $25.00. So much for what can be done by spraying in half a day.

It was nearly night when Mr. Berg's eighteen-year-old son got me home, and I insisted that the horse should have a little rest and refreshment; but as he was going to be out after night the boy said he could stop only a few minutes.

Now, I know by experience that boys of eighteen *also* need refreshment when it gets to be about supper time. I ate the last of my bread in the morning, there wasn't a thing cooked, and my young friend could not wait, especially for any of *my* cooking. I happened to look up on a high shelf at the north side of the cabin, and spied a strange covered basket. It contained a loaf of nice bread, a nice pie, and a good-sized chunk of gingerbread. This, with some bologna I had just brought from the market, made us a nice "picnic" after our long ride. Our nearest neighbor. Mrs. Heimforth, sent the basket; and her boy, finding the house locked, set the basket up on the shelf. My good friend, what is it worth to you to have the good will of *all* your neighbors?

I should have said, in the proper place, the plums are shipped in bushel baskets with slatted covers, the same that are used for peaches. A large factory (now running over hours) in Traverse City makes these bushel fruit-baskets for only $1.00 per dozen; covers, where wanted, 2 cts. each additional. *Mrs.* Berg does the sorting, and she takes the responsibility of seeing that nothing is put in a basket before it is nailed up that isn't first-class. Just now there are in Traverse City buyers for all the peaches that may be brought in. The price is from 75 cts. to $1.25 per bushel. A basket is taken from each load, at random, poured out, and the price offered from the looks of this sample. There are a *few* growers, however, who have gained such a reputation that their load commands the top price, without examination. Friend Berg did not exactly say so, but I judge he is one of that few. When we get right down to the bottom of it all (we might say, I suppose, to the bottom of the *basket*), *Mrs.* Berg's careful and faithful inspection is the explanation, and *Mr.* Berg gets all the credit. Even if she is the mother of several nice grown-up daughters, she is about as bright and nice-looking as any one of the entire lot.

Just one thing more: You may think it a very easy matter to grow trees bending beneath loads of plums as large as hens' eggs; but I questioned my young friend, Samuel Berg, on our way home (Samuel *belongs* to that church I am trying to build up), and I found his father is drawing manure from the stables in the city, winter and summer. The trees are sprayed and cultivated according to the latest and most approved modern methods, and the *whole family help.* Mr. B. has only about seventeen acres (less than a dozen in *trees*), and he can take care of all his land. and *do it right*, and at the proper time. If you are going to grow fine fruit you *don't* want a big farm, but you *do* want a wife and children (a good lot of the latter) who know how and like to *work* with fruit.

Storrs & Harrison's catalog (Painesville, Ohio, describes the Grand Duke plum as follows: "Fruit very large, of fine quality, free from rot, very productive. Ripens last of September."

THE DANZENBAKER SUPER.

During the past three months we have shipped several thousand Danz supers with equipment for raising and shipping comb honey in the Danz. 4x5x1⅛ plain section. One producer in California has 1500 in use, and proposes to get 1500 more. He is getting 15 cts. a pound for his honey right at home in California. These facts are an indication of the growing popularity of this arrangement for comb honey.

SECOND-HAND HONEY-CANS.

We have on hand something over one hundred cases of two 60-lb. cans, second hand, but in good condition. The most of them are bright, having been used but

once for honey, and practically as good as new to use again. We offer these at $5.00 for 10 boxes; 45 cts. in 25-box lots or more. There are some not so new, but which for low grades of honey will answer nicely. We offer these at $3.50 for 10 boxes; 25 or more at 30 cts. a box. We would not expect to furnish any that were badly rusted inside. They are left just as emptied, and should be thoroughly cleaned just before filling.

NEW HONEY-JARS.

We are adopting a new style of honey-jar which we expected to present in this issue, but the illustrations have not reached us in time. We hope to give them in our next. They are the same jar that Geo. W. York & Co. use in their Chicago trade, and have offered in the *American Bee Journal*. They seal by means of a rubber ring with glass top and steel spring over the top. They are very neat, and are quickly and securely sealed. We have two sizes, put up a gross in a crate.

1 lb. spring-top jar, $5.00 per gross.
½ " " " $4.50 " "

There are various styles and sizes made with this spring-top fastener, and we shall be pleased to hear from those looking for a good cheap tasty jar for putting up honey for the retail trade.

COMB HONEY WANTED.

We are having an excellent demand for honey, both comb and extracted. We have a good supply of very choice extracted honey, but we have not been getting comb honey as fast as we could use it to supply our orders and have been obliged to disappoint prospective customers because we have not the honey on hand to furnish promptly. It is the same experience over again that we have had for the past three years. Too many bee-keepers put off the work of casing and preparing their honey for market too long. For several years we have had a dearth of honey during September and early October. By the latter part of October or November and December it comes in much more plentifully, but by that time the best demand for it is past. Why do not more producers learn to get their honey ready and ship it earlier? Perhaps because it is not perishable, and can wait, while some other things, being perishable, can not wait. But it is too bad to lose the advantage of the best market, and I think more could, if they realized the importance of it, get their honey to market earlier.

We are almost daily receiving offers of extracted honey, showing a plentiful supply in this form; but comb honey is not so abundant or else those who have it are in no hurry to dispose of it. Last year some producers who did not get their honey to market early lost quite heavily in consequence. I hope they may not make the same mistake this year.

FRANCIS DANZENBAKER AT THE HOME OF THE HONEY-BEES.

For several weeks Mr. Danzenbaker has been with us here in Medina, perfecting his already good hive—a hive that has worked its way into the favor of many of the producers of gilt-edged comb honey. When our friend first came to Medina in 1888 he introduced the lock corner, which we subsequently adopted for all our hives, and that feature is now used in all up-to-date hives sold in America.

He brought to our attention, on another visit, the Danzenbaker bottom-board and cover. These we also adopted on our regular Dovetailed hives. On this present visit he introduced some improvements which we regard as decidedly ahead of any thing he has brought out before, and which may possibly work a revolution in some of the minor details of hive-construction.

Abstemious in his habits, using neither tea, coffee, nor tobacco, our friend at 65 has an active mind, and a strong physique.

For the production of comb honey, if reports are to be believed, the Danzenbaker hive with closed-end frame is one of the best, if not the best, in the market, and seems now to fully justify some of the claims of its inventor. Mr. Danzenbaker expects to go from here to Cuba, via Washington and Florida, there to demonstrate the value of his hive in the production of fancy comb honey.

Our new clubbing list will be ready Nov. 1 or 15. Do not be in a hurry to make up your club of newspapers and magazines till you see what we have to offer.

Convention Notices.

Just as we go to press we receive notice from Mr. Udo Toepperwein, announcing that the Texas Bee-keepers' Association will have a meeting in the main building on the fairground, San Antonio, Oct. 23. We learn that every thing has been done to make this one of the most interesting conventions to bee-keepers ever held. All the different kinds of machinery used in bee-keeping will be exhibited together with 25 different kinds of honey from the Home of the Honey-bees. Every bee-keeper in the State is urged to be present. The premiums offered are very liberal.

DR. A. B. MASON, Sec. National Bee-keepers' Association, Sta. B, Toledo, Ohio.

Dear Sir:—I am directed by the Executive Committee of the Ontario Bee-keepers' Association to extend to the officers and members of your association a very cordial invitation to attend the annual meeting of the Ontario Bee-keepers' Association at Barrie, in early December. The dates not being finally set yet we can not be definite, but hope to know soon, when we will advise you. We look forward to having a very pleasant meeting. Yours truly,

W. COUSE, Sec.

Streetsville, Sept. 19, 1902.

WANTED.—Comb honey, all grades, carload lots or less than carloads, for cash. Correspondence solicited.
JOS. M. MCCAUL,
120 and 122 West Broadway, New York.

WANTED.—Fancy and No. 1 white comb honey; also gilt-edged extracted clover in 60-lb. cans.
B. WALKER, 28 33d Place, Chicago, Ill.

WANTED.—Honey and beeswax. Mail sample, and state price delivered here. C. H. W. WEBER,
2146, 2148 Central Ave., Cincinnati, Ohio.

WANTED—Comb and extracted honey. State price, kind, and quantity. R. A. BURNETT & CO.,
199 South Water St., Chicago, Ill.

We will be in the market for honey the coming season in carloads and less than carloads and would be glad to hear from producers everywhere what they will have to offer. SEAVEY & FLARSHEIM,
1318-1324 Union Avenue, Kansas City, Mo.

FOR SALE.—1400 lbs. extracted honey at 8c per lb.
J. M. QUICK, Syracuse, N. Y.

FOR SALE.—White extracted honey from alfalfa in 60-lb. cans, at $4.50 each; light amber honey mixed with Rocky Mountain bee-plant, fine flavor, $4.20 each. Prices on small cans and pails on application.
M. P. RHOADS, Box 216, Las Animas, Colo.

FOR SALE.—Fine quality of extracted honey, both clover and sweet clover, in 60-lb. cans, at 8c; also bees in L. frames. Do not send local checks.
DR. C. L. PARKER, Sta. A., R. F. D., Syracuse, N. Y.

FOR SALE. Extracted honey, from alfalfa, at 7½c for No. 1 select, 7c for No. 1, 6½ for No. 2; discount on 1000 lb. lots. Send for sample.
D. S. JENKINS, Las Animas, Col.

FOR SALE.—Several thousand pounds comb honey in Danzenbaker 4×5 sections. Shall commence filling orders in August. WM. MORRIS, Las Animas, Col.

FOR SALE.—572 lbs. No. 1 and 272 lbs. fancy clover comb honey in 4×5 plain sections, crated in 20-section no-drip cases, at 16@17 f. o. b. here.
E. D. TOWNSEND, Remus, Mich.

FOR SALE.—380 barrels prime Mexican honey. Samples and prices cheerfully furnished. State quantity wanted. STROMEYER & METZEL,
31 South Water St., Philadelphia.

FOR SALE.—Alfalfa honey; six hundred, 60-lb. cans, fancy white, and two hundred cans slight amber tint. Freight to principal points east. 75c. What will you pay? MITCHELL & HART.
329 Wash. Avenue, Ogden, Utah.

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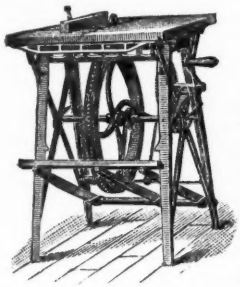

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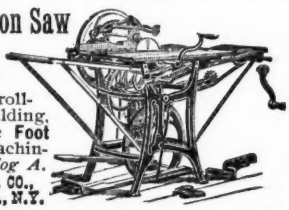

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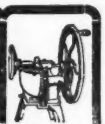

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Box 54, Erie, Pa.

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No money until you're satisfied that it cuts easier and faster than any other. Isn't that better than paying cash in advance for a machine that you never saw? Catalogue free. F. W. MANN CO., Box 37, Milford, Mass.

Two Years for $1.00.

After a man succeeds in publishing a good journal, the next step is that of getting it into the hands of the people, of getting them to reading it, and becoming acquainted with its merits. This can be done by advertising, sending out sample copies, circulars, etc. All this costs money. I think I am safe in saying that for every new subscriber I have received, I have paid out $2.00 in advertising; hence I have often said that a publisher of a good journal could afford to send his paper one year free, for the sake of getting it into new hands. It would cost no more than other forms of advertising and would be very effective, but, for obvious reasons, this plan could not be put into practice, but I am going to come as near to it as I can. I have between 200 and 300 complete sets of back numbers for the present year, and as long as the supply holds out I will send a complete set, and the rest of this year free, to any one who will send me $1.00 for the Review for 1903. For a few particulars regarding the numbers already published this year, read the following:—

There is not room here to say very much about the back numbers for this year, but I will mention one prominent feature of each issue.

January is a Colorado number; six pages being devoted to a beautifully illustrated "write-up," by the editor, of that paradise for bee-keepers This issue also shows how to make a cheap hive-cover that will neither split, warp, nor leak, in any climate.

February contains the beginning of a series of articles by M. A. Gill, who last year managed 700 colonies of bees, and produced nearly two carloads of honey. These articles are written from the fullness of his experience.

March has an article by S. D. Chapman, on "What Makes Bees Swarm," that I consider the best I have seen on the subject. It gets rtght down to the foundation of the matter. In fact, so thoroughly does Mr. Chapman understand the matter that he has so made up a colony that one half would swarm, leaving the combs deserted. while the other half would not budge.

April ushers in some typographical changes. The smooth, shiny, glazed paper was laid aside for a soft white paper that gives to printing a clean, tasty, tempting look. The frontispieces are printed in colors instead of somber black. The cover is of Court Gray printed in two colors—Umber and Milori blue.

May contains a five-page review of a book by E. A. Morgan, entitled "Bee-keeping for Profit." It was rightly named, the author getting right down to basic principles, and giving the chit of profitable honey production, particularly in the Northern States

June shows how a man may practically defy foul brood; how he may keep bees in a foul-broody district, all surrounded by diseased colonies, yet keep his apiary so free from it and its effects as to secure a good crop of honey each year.

July has an excellent article by Mr. Gill on the management of out-apiaries for the production of comb honey, showing how the work must be generalized, yet systematic, and *done just a little ahead of time.*

August illustrates and describes the handiest and best bee-tent for circumventing robbers that I ever saw. It also has an article by Mr. Boardman on "shook" swarms, showing how we may practically take swarming into our owu hands.

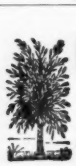
September illustrates and describes a cheap but substantial bee-cellar, built something like a cistern with a roof over it This issue also gives some of the best papers read at the Denver convention, together with a lot of interesting items picked up at that convention.

October gives a three-page illustrated write-up of Dr. Gandy and his artificial pasturage. While on his way home from the Denver convention the editor of the Review spent three days with Dr. Gandy, using his eyes, ears, and camera, and this write-up is the result. If you want to know the *truth* of the matter, read this issue.

Remember that each issue contains dozens of interesting and instructive items aside from the ones mentioned.

Send $1.00, and the back numbers for this year will be sent at once, your name put upon the subscription list, and the Review sent to the end of next year.

W. Z. Hutchinson, Flint, Michigan.



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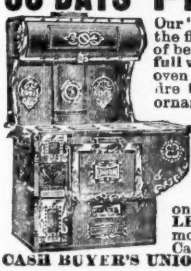

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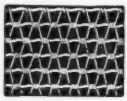

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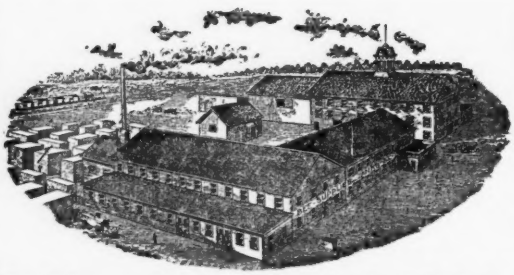

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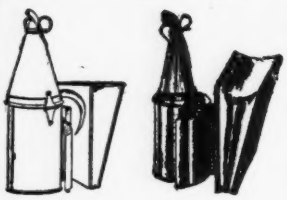

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